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APRIL 10 1954

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PRODUCED FROM VIRGIN POLYTHENE—these unbreakable lightweight and airtight containers are manufactured in one piece with no seams to leak.

Many famous brands of toiletries—cosmetics—domestic and agricultural commodities use Poly-Tainers as standard packs.

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Manufactured by E. Shipton & Co. Ltd., Ferndown Works, Northwood Hills, Middx. Tel: Pinner 1103/5 (P.B.X.)

C.S.2

Like aspirin

it is analgesic, sedative, anti-rheumatic

Like pure calcium aspirin it is soluble and bland

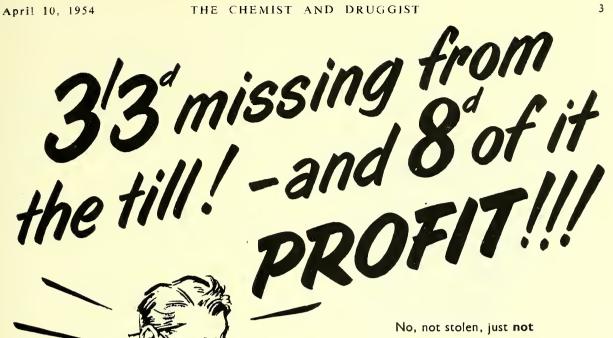
By providing calcium aspirin in stable, soluble, palatable tablet form, 'Solprin' overcomes the physical and chemical defects, not only of aspirin, but of calcium aspirin itself as generally prepared.

Extensive clinical trials with 'Solprin' have shown just such gratifying results as might be expected from so remarkable a combination of properties. Except in cases of extreme hypersensitivity, aspirin, in the form of 'Solprin', can now be administered in large doses over prolonged periods, without gastric or systemic disturbances.

SOLPRIN

Stable, soluble, palatable calcium aspirin

Solprin is not advertised to the public and is available only on prescript on (U.K. and Northern Ireland only). Dispensing pack, price 7/6 (Purchase Tax Free) contains 300 tablets in foil.





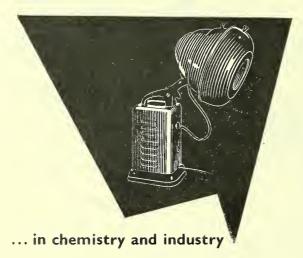
No, not stolen, just not taken because you had no stock of Ribena. Worse than that, you disappointed a customer. Competition is too keen to do this! There's no sense in asking your customers to go to your competitors. What's more they may stay there if they can get WHAT THEY WANT-WHEN THEY WANT IT If Ribena is not on your shelves ask your Wholesaler now—He's got it, and can supply you immediately.

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IMPORTANT ANNOUNCEMENT

The Apollinaris Co. Ltd

Boyril Ltd

THE DIRECTORS OF the Apollinaris Company Limited and Bovril Limited announce that negotiations have now been completed for the purchase by Bovril Limited of that part of the business of Apollinaris Company Limited relating to Gold Cup Jaffajuce and Four Seasons Fruit Squashes, which will be manufactured and distributed by Bovril Limited as from the 1st April, 1954.

The Apollinaris Company Limited will continue to manufacture at Harrow and in the provinces and distribute their full range of carbonated drinks, Presta Squashes and Baby Fruit juices and distribute exclusively Apollinaris Natural Mineral Water and other foreign waters.

In addition to the Bovril Sales Organisation, Lovell & Christmas Limited will continue to distribute Gold Cup Jaffajuce and Four Seasons Fruit Squashes to the grocery trade in England and Adam Steedman Limited will continue to distribute in Scotland,

The Apollinaris Company Limited will distribute Gold Cup Jaffajuce and Four Seasons Fruit Squashes to the Licensed Trade on behalf of Boyril Limited.

Gold Cup JAFFAJUCE Products:— Orange • Orange and Pineapple Lemon • Lime • Grapefruit

FOUR SEASONS Products:—
Orange · Lemon · Grapefruit
Pineapple Crush · Lemon Barley



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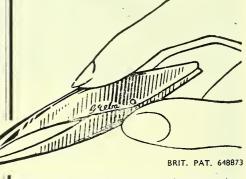
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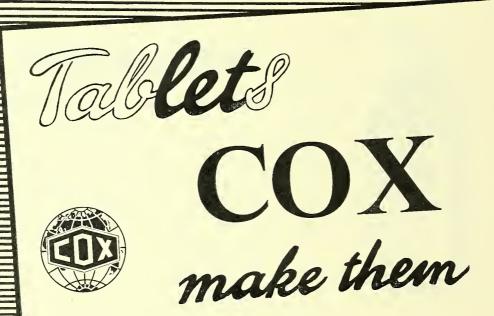
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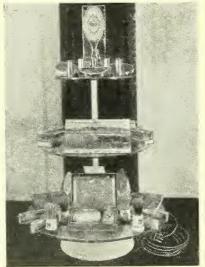
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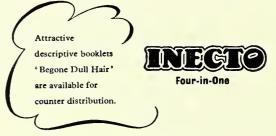
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Grateful women
everywhere are finding Four-in-One
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Easy to use—it can be
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like a shampoo—
Four-in-One not only
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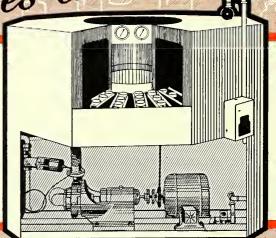
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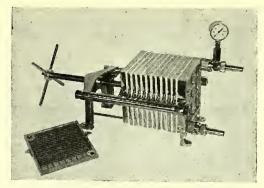
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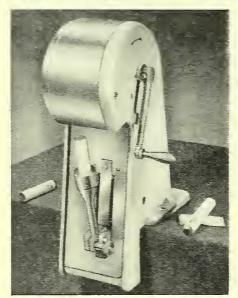
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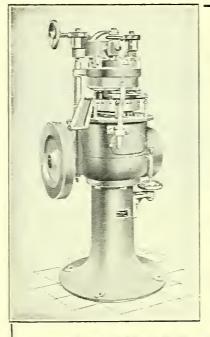
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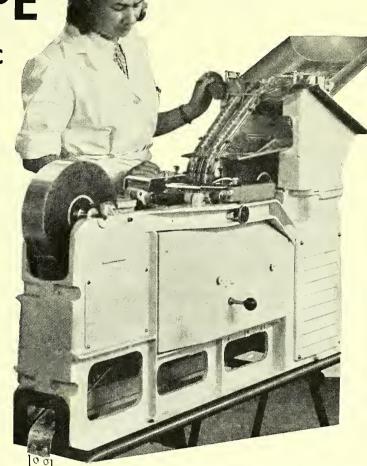
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A semi-automatic volumetric

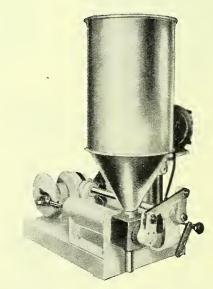
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"THREE POINT"
WADLESS CLOSURE?

- NO WASHER IN CAP
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AFTER FILLING

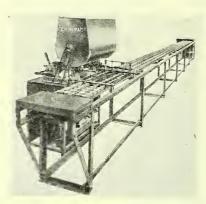
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A selection from our range of FILLING MACHINES



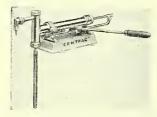
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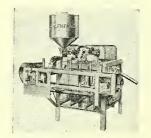
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Rotary Jar Filler.



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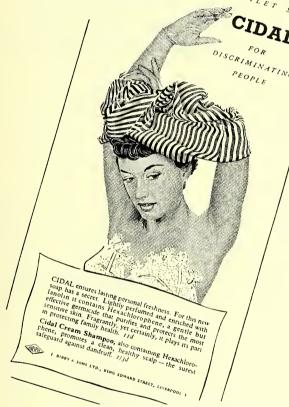
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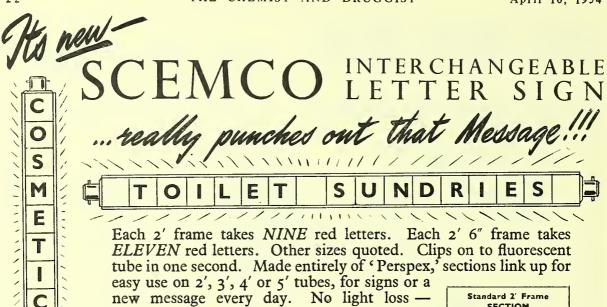
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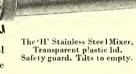
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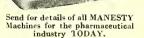
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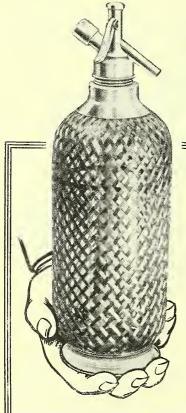
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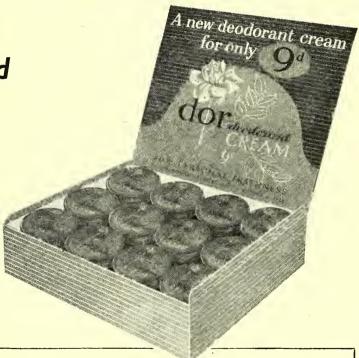
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Official organ of the Pharmaceutical Society of Ireland and the Pharmaceutical Society of Northern Ireland

Volume 161

April 10, 1954

No. 3868

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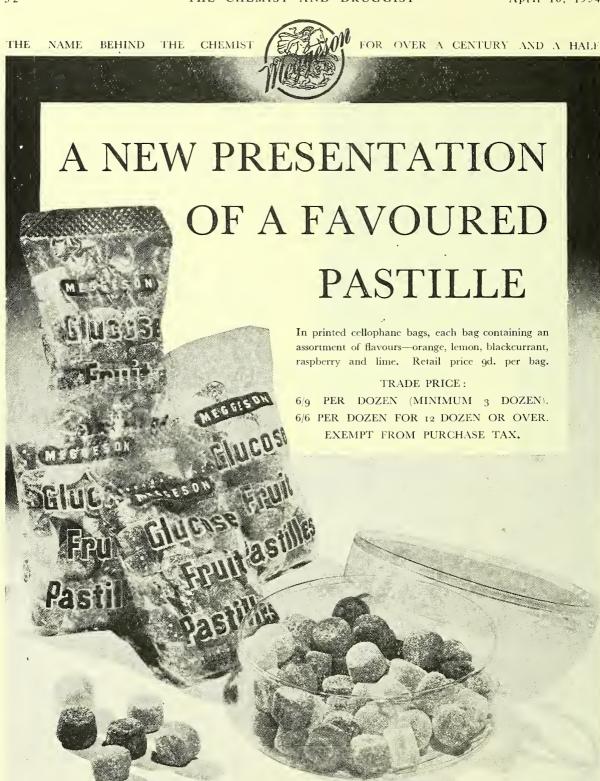
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Volume 161

APRIL 10, 1954

No. 3868

Incentives to Re-equip

BUDGET ASSISTANCE FOR INDUSTRY

THE principal proposals affecting industry in the Chancellor's "carryon" Budget introduced on April 6 were new investment allowances for re-equipment of factories and a 45 per cent, reduction in estate duty for family businesses

The investment allowance replaces the previous initial allowance and applies to capital expenditure payable from April 7. The rates of allowance are 20 per cent, for new plant and machine, y, and 10 per cent, for new industrial buildings. They apply to plant and buildings for scientific research, but not to motor-cars second-hand machinery and plant.

Ce tain anomalies in the operation of estate duty are being corrected; in particular the valuation of shares for duty purposes is brought into line with the actual sale price. Where industrial premises, plant or machinery are used for the purposes of a family business, the estate duty on those assets is reduced by 45 per cent. The reduction is extended to family companies to which the asset basis of valuation applies. A further change benefiting small businesses is that the property of a deceased partner or director is not to be aggregated with sett ed property if under £10,000 in value (it was previously aggregated at £2,000 and over).

Businesses that are converted into new companies are to be taxable in a different way from previously. If, after such a change, three-quarters of the holding continues to belong to the same persons, there will now be no saving of tax to the business.

COUNCIL NOMINATIONS Eighteen acceptances

THE following nominations of candidates for the election of seven members to the Council of the Pharmaceutical Society in May have been received and accepted by the secretary and registrar of the Society:

BLOOMFIELD, James Cecil, Portsmouth.

CONNELLY, Frederick Henry, Streat-

ham, London, S.W.16.
COOPER, William, Bristol.
Dowry, Joseph Masters, Southamp-

ton. Goodall, Edward John George,

Lancing, Sussex.
GRAINGER. He, bert Searle, London, S.W.1.

GRAVES, Henry Jarvis, Exmouth. HALL, Oswald Thorneycroft, Coven-

HINCHLIFFE, George, Dukinfield. HINCKS, Mildred Janet, Sough. HOWELLS, William Spencer, Richmond. JACKSON, Mitchell, Leeds, 7. McNeal, James Fallows, Amersham. Park, William Alexander, Aberdeen. ROBINSON, Eric, Bradford, SEARLE, Thomas Edwin, Eastbourne. WILLIAMS, Herbert, Reading. WILSON, Frank Clay, Wimbledon. Four nominations were not accepted.

EXCHANGE CONTROL Small concessions to exporters

THE Commissioners of Custom₃ and Excise have made two simplifications in documentation of exports for exchange control purposes from April 2. The effect of the first relaxation is to dispense with exchange control forms tC.D.3) for exports up to a value of £25 (instead of £10 previously), in respect of both *bona fide* gifts and goods exported on sale. The second relaxation concerns exports between £25 and £250 in value, and dispenses with the requirement that exporters have to produce bank certificates to prove in each case that the exchange earned by exports has been surrendered. From May 1, exporters to Scandinavia will be put on the same footing as exporters to non-sterling area countries and will have to complete the same

T.B. PREVENTION Local authorities circularised

A MEMORANDUM caling for an intensification of preventive measures against tuberculosis has been sent to all local authorities and hospital authorities by the Minister of Health. The memorandum states that the very slight improvement in notification rates is in strong contrast to the d.amatic in strong contrast to the d.amatic improvement in mortality ra'es." Deaths from respiratory tuberculosis in England and Wales in 1953 fell by 1,424 from 9,335 in 1952. Notifications numbered 41,000, compared with nearly 42,000 in 1952. The memorandum says that if as much effort was put into tracing the source of tuber-culous infection as was put into finding out the origin of a typhoid out-

break or tracing the contacts of a smallpox patient the decline in incidwould be acce.erated. Local health authorities now had the opportunity of giving B.C.G. vaccine to children about to leave school and therefore about to enter the age goup at which it was known that the risk of pulmonary lesion was greatest. It was considered that there was much to be gained by the selective use of mass radiography for groups which show some evidence of special risk rather than for the re-examination of large groups of employed persons, states the report. Special surveys in areas where it was thought that the incidence of the disease was high had so far proved of value.

CHEMICAL SOCIETY New officers and subscriptions

AT the annual meeting of the Chemi-AI the annual meeting of the Chemical Society, held in Manchester on April 2, the following officers were e ccted:—*President*, Professor W. Wardlaw; *Vice-presidents*, Professors E. R. H. Jones, R. P. Linstead and M. W. Melville; and *Treasurer*, Mr. M. W. Perrin. THE PRESIDENT announced that the annual subscription was being reduced from £3 10s. to £2 2s. to encourage young people to join the

EHRLICH CENTENARY **Exhibition in London**

A COMMEMORATIVE exhibition to mark the centenary of the birth of Paul Ehrlich (see C. & D., March 13, Po 273) was opened at the Wellcome Research Institution, 183 Euston Road, London, on March 25, by Sr Henry H. Dale (chairman of the Welcome Trust). Trust). The exhibition, which has been arranged from the collection of historical Wellcome the medical museum, illustrates every phase of Ehrlich's life and work. A case of exhibits connected with his early life shows a set of cutlery given to Erhlich as a first birthday present, a silver seal presented to him on his confirmation in 1867, his protractor, and an auto-graph album, and in the background portraits of his ancestors and a genea-logical tree showing his re'ationship to Carl Wiegert, famous pathologist. There are portraits of his tutors and exhibits of letters, MSS., laboratory notebooks and apparatus illustrating every stage of his career and touching on that of his colleagues and contemporaries Koch, Jenner, Pasteur and Von Behring. Among exhibits illustra-ting his early interest in the development of staining methods in bacteriology are shown some 17th century microscopes and ivory microscopic

slides used during the 18th and 19th centuries, a microscope used by Pasteur and a syringe used by Lister. are numerous exhibits illustrating the work done by Ehrlich and his col-leagues in the development of bacteriology, immunology and chemotherapy. A showcase is devoted to the centenary of Behring, and another case entitled "Chemotherapy: the Idea," shows the chemical compounds used in connection with the original synthesis of 606 (arsphenamine). Culmination of the exhibition is a por-trait in oils of Ehrlich—a copy of the original one at Frankfurt—beneath which is exhibited the illuminated address given to him with the Nobel prize in 1908 for his work on immunology. The portrait is flanked by numerous framed certificates of honorary membership of medical and scientific societies of all nations. A further case of personal exhibits shows his black velvet academic cap, mementoes of the Nobel Prize dinner in 1908, and presentations made to him by pupils and fellow-workers on his 50th and 60th birthdays. The exhibition will remain open for approximately

IRISH NEWS

two months.

Discussion on Health Scheme EXPLORATORY discussions took place recently between the Department of Health, Dublin, and members of the pharmaceutical joint committee, on the mother and child health scheme which is coming into operation in August. The Council of the Pharmaceutical Society of Ireland was represented by Messrs. M. Costello (president), D. J. Kennelly and J. G. Coleman (registrar); and the Irish Drug Association by Messrs, A. Thornton and Brendan R. Smith (secretary).

Ulster Chemists' Association

A WHIST drive organised by a subcommittee of the Ulster Chemists' Association was held in Belfast on March 24, Messrs. W. H. Boyd (president of the Pharmaceutical Society of Northern Ireland) and J. Caldwell acted as masters of ceremonies. Prizes were donated by manufacturers and local wholesalers.

CONFERENCE ARRANGEMENTS

Preliminary programme

THE preliminary programme of the 1954 meeting of the British Pharmaceutical Conference in Oxford, September 13-17, has been announced and is given below. All science sessions are being held at St. Hugh's College.

MONDAY (September 13).—At 3.15 p.m., buffet tea in Playhouse; at 4, opening session and address by chairman of the conference in Playhouse; at 8.30, civic reception and dance in Town Hall.

TUESDAY (September 14). — At 9.30 a.m., science session; 9.30, ladies' excursion (tour of city); at 1 p.m., luncheon; at 2.15, science session; at 2.15, ladies' excursion to Blenheim Palace; at 4, tea for members attending the science session; at 4.30, science session (continued); at 7.15 for 8 p.m. conference banquet in Town Hall.

WEDNESDAY (September 15). — At 9.30 a.m., science session; at 10, ladies' excursion to marmalade factory of Frank Cooper, Ltd., or works of Pressed Steel Co., Ltd.; at 10, Branch Representatives' meeting in Town Hall; at 1 p.m., luncheon; at 2.15, ladies' excursion to Morris Motors, Ltd.; at 2.15, Branch Representatives' meeting (continued); at 6, coaches leave for Shakespeare Memorial Theatre, Stratford-on-Avon.

THURSDAY (September 16).—At 9.30 a.m., symposium session in Playhouse; at 1 p.m., luncheon; at 2.15, conference excursion—"Cotswold Villages." (Evening free).

FRIDAY (September 17). — At 9.30 a.m., science session; at 12 noon, closing session in Playhouse; at 1 p.m., luncheon; at 2.15, sports; at 8 for 8.30, conference ball in Town Hall. EXCURSIONS.—A limited number of

EXCURSIONS.—A limited number of places in the ladies' excursions will be available for men at 2s. 6d. a head for each factory visit and 10s. for the visit to Blenheim Palace. Early application to the local secretary essential.

GENERAL INFORMATION. — Books of tickets, Monday to Friday inclusive, £5 5s, each. Day tickets will be issued for the events of any one day, if accommodation is available, at £2 2s. each. Members who are not staying at one of the colleges will be issued

with tickets for luncheon. Cheques should be made payable to the Oxfordshire Branch B.P.C. Fund, and sent with applications to the local secretary, Mr. T. Roy Hardy, 39 Cavendish Road, Oxford.

The conference office will be open from 10 a.m. on Monday, September 13, at St. Hugh's Co.lege, St. Margarets Road, Oxford.

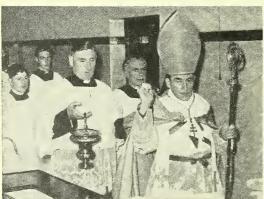
SPORTS. — Arrangements have been made to hold the competitions for the Edmund White golf trophy on the Frilford golf course, the London challenge cup for bowls at the Oxford City and County bowls club and the Jephcott tennis cups on the courts at St. Hugh's College, on Friday, September 17.

Accommodation

The majority of conference visitors are expected to want to stay at the ladies' colleges, three of which will be available. Accommodation has also been reserved at the Randolph Hotel. Applications for accommodation at the colleges and Randolph Hotel should be sent to the local secretary. Because the colleges do not have any facilities for collecting accounts, visitors are requested to pay with their application or at the conference office at St. Hugh's College. Visitors wishing to stay at other hotels (in Oxford the Mitre, Golden Cross, Royal Oxford; and in Woodstock the Bear and Marlborough) should apply direct.

The colleges concerned are St. Hugh's, Somerville and Lady Margaret Hall, housing 120, 120 and 180 visitors respectively. The amenities provided are similar to those of the halls of residence at Nottingham University. All those amenities (including common rooms, tennis courts, etc.) that are available to undergraduates will be available to visitors. In addition, bars are being installed.

Men are advised to take shaving mirrors. No car parking facilities exist at the colleges, but there are garages nearby. Transport is being provided to the official functions from the colleges and from the Randolph Hotel.





Left: The Archbishop of Dublin blessing one of the laboratories of the college of the Pharmaceutical Society of Ireland (C. & D., March 27, p. 308). Right: The Archbishop with (left to right) Messrs. H. P. Corrigan, M. Costello (president), P. F. McGrath (vice-president), Very Rev. T. B. Condon, and James G. Coleman (registrar).

SCOTTISH NEWS

Sighthill Health Centre

THE expansion of the pharmaceutical services at the Sighthill, Edinburgh, health centre was raised at a meeting of Edinburgh Executive Council re-cently. Mr. H. G. HYND (pharmacist at the centre) submitted a letter, pointing out that he was at present fully occupied with routine dispensing and other work, and stating that some assistance would be an advantage both for dispensing and for expanding the scope of the work. MR. THOMAS CHILLES (chai man of the services ad-MR. THOMAS ministration committee) said it had been understood that the pharmacist at the centre would only dispense National Health Service prescriptions. The Executive Committee decided to seek fuller details of the wider work proposed, and to submit them to the Department of Health for Scotland for It is understood their observations. that during the past few months there has been a big increase in the number of doctors' prescriptions dispensed at the Sighthill centre. The Corporation health committee on a visit was informed that in March, 200 forms (250 prescriptions) were dealt with each week. On one day recently 66 forms (98 prescriptions) were dispensed.

NEWS IN BRIEF

Summer Time.—British summer time commences at 2 a.m. on April 11. Clocks should be advanced one hour at the close of business on April 10.

Sales Managers' Conference. — The 1954 annual conference of the Incorporated Sales Managers' Association is being held at the Palace Hotel, Buxton, Derbys, May 21-24.

Joint Pricing Committee.—Mr. L. C. Halliwell has been elected *Chairman* of the Joint Pricing Committee for England for 1954-55, and Mr. D. E. Sparshott is re-elected *Vice-chairman*.

Parcel Rate Increase. — The inland parcel post rates are being increased on April 12 to the following: Not exceeding 2 lb., 1s. 1d.; 3 lb., 1s. 3d.; 4 lb., 1s. 6d.; 5 lb., 1s. 8d.; 6 lb., 1s. 10d.; 7 lb., 2s.; 8 lb., 2s. 1d.; 11 lb., 2s. 3d.; 15 lb., 2s. 4d.

Deputation on Closing Hours. — A deputation, comprising representatives of the Early Cosing Association, the Trades Union Cong ess, the Union of Shop, Distributive and Allied Workers and retail trade organisations opposing the Government's plans for later shop closing hours (7 p.m. and 8 p.m. on the late day) was received by the Home Secretary (Sir David Maxwell Fyfe) on April 5.

Disinfectant Manufacturers.—At the annual meeting of the British Disinfectant Manufacturers' Association held on March 19 the following officers were e'ected:—Chairman, Sir Knowles Edge, Bart. (William Edge & Sons, Ltd.); Vice-chairman, Mr. W. Mitchell (Hull Chemical Works, Ltd.); Treasurer, Mr. V. G. Gibbs (William Pearson, Ltd.); Secretary, Mr. W. A. Williams, Cecil Chambers, 86 Strand, London, W.C.2.

TOPICAL REFLECTIONS

By Xrayser

Hints on Productivity

Two news items in your issue of April 3 (pp. 334, 336) are concerned with productivity. As one of them relates to large-scale operations and the other to medium- or small-scale working, it may be useful to collate them. The official report of the conference held last October under the auspices of the Association of British Chemical Manufacturers (a conference based on the work of a productivity team that had visited the United States on behalf of the heavy chemical industry) has just been published, and may be obtained from the Association. The commendations arising from observations made in the U.S.A. are held to apply to other sections of the industry as well as to that devoted to heavy chemicals. Full use should be made, the report states, of work study; and "financial incentive schemes" should be introduced where appropriate. Manufacture on a smaller scale has been dealt with by Dr. E. J. Holder (managing director of Duncan, Flockhart & Co., Ltd.) speaking as chairman of the Management Association of South-east Scotland. Dr. Holder claimed that 80 per cent. of Britain's output is produced by medium and small firms. One of his points was that a "remarkable and immediate increase" in productivity could be obtained if most executives would walk through their departments and make lists of operations that were not absolutely necessary: There is, the speaker added, a middle way between American "super-hustle" methods and the leisurely pace of some British processes.

Business Archives

The fact that the fifth conference of the National Register of Archives (p. 334) has chosen business archives for its subject of discussion is satisfactory. For many years past you have published excellent selections from material preserved by leading drug and chemical houses and by pharmacists. That material is important, not only as a record of the histories of the businesses themselves, but also as throwing light on social conditions which might otherwise be forgotten. Books on the scale of Mr. E. C. Cripps's "Plough Court" are well worth a place on one's bookshelves. Not every business, of course, possesses so copious a store of material. But there must be several, or even many, of our oldest cities and towns where a student of the past might search out and compile records of local pharmaceutical history for distribution to selected libraries. My reading of periodical publications shows me that articles appearing in them are liable to be lost sight of as time goes on, and to become difficult to trace (though vaguely remembered), unless general indexes to the journals in which they appeared are available. The Pharmaceutical Society's History of Pharmacy Committee is no doubt giving attention to this matter.

Strange Logic

Robert Louis Stevenson or one of his contemporaries has told of a Scotsman who, when seriously ill, was advised to send for a minister and a doctor: his reply was that he wanted neither, but only wanted to argue. This story came to my mind when I read, on p. 337, the summary of a memorandum of evidence on the cost of the National Health Service in Scotland, presented by the Scottish Association of Executive Councils. "Although," it states, "there is a wellnigh superstitious faith in the efficacy of drugs and a belief that a prescription must follow every consultation. it should yet be possible in time to convince the public [otherwise]." Yet, a few sentences further on, we read: "There is a tendency to forget that the exhibition of many of the modern drugs, apart from saving lives, materially shortens many illnesses . . . the high cost of those drugs may actually be more than offset by the saving in sickness benefit and in time lost. . . . " The average employee in a factory, shrewd enough where his work is concerned, will probably reason that the sooner he gets over an illness the greater will be his benefaction to his country. Therefore hang the expense! Press the doctor for plenty of up-to-date medicine!

"ANY QUESTIONS?" IN MANCHESTER

Experts deal with hospital pharmacy and "big business" topics

AT a recent meeting of the Manchester Branch, Guild of Public Pharmacists, to which members of the Manchester and Salford Branch of the Pharmaceutical Society were invited, a panel consisting of Messrs. A. G. Fishburn (Imperial Chemical Industries, Ltd.), J. B. Lloyd (chief pharmacist at the Manchester Royal Infirmary), Dr. Colin Melville (School of Pharmacy, Manches'er University), and Mr. H. Steinman (a member of the Pharmaceutical Society's Council) undertook to answer questions. Some of the questions and answers are he e recorded:

Is it in the best interests of the National Health Service that hospital out-patient prescriptions should be sent to the patient's own doctor?

to the patient's own doctor?

LLOYD: Although hospital pharmacists salaries depend to some extent on out-patient attendances it is in the best interests of the patients that the diagnosis should be sent to the general practitioner, who should then order any medicine required. STEINMAN: The original intention of the Health Service was that hospitals should on'y be responsible for the treatment of inpatients, but that has not materialised. MELVILLE: In many cases it is convenient for the patient to get his treatment at the hospital to avoid delay.

Are the newer antibiotics only "variations on an original theme" put out by big business, or will they serve some specific purpose which the others will

FISHBURN: Those firms investigating in the antibiotic field are mainly seeking an antibiotic that will cure tuberculosis. There have been no major advances in that field during the past year or two, but minor advances largely in the technique of presentation of antibiotics, PROFESSOR H. BRINDLE (from the floor): The important developments recently have been the introduction of antibiotics active against organisms resistant to earlier antibiotics.

Apprenticesh'p

Does the panel agree that the present system of two years' pre-graduate or one year's post-graduate apprenticeship is unfair and unsatisfactory and that a better system would be two years for all—one before and one after the academic course?

MELVILE: There is no advantage to be gained by pre-graduate apprenticeship and one year after the academic course is enough. Steinman: I would prefer to see the apprenticeship run concurrently with the academic course. If it has to be taken separately one year is not enough to produce a good practical pharmacist. FISHBURN: Pregraduate apprenticeship is not a good thing from the student's point of view since it breaks the thread of education. Post-graduate apprenticeship in hospital pharmacy offers considerable advantages in the wide variety of drugs handled and experience in many pharmaceutical operations. LLOYD: Two years' pre-graduate apprenticeship plus three years' academic course and two years' military service means that a

man will be twenty-four or twenty-five before he can qualify.

Is there any advantage to the ordinary pharmacist in the change from the Imperial to the metric system?

Imperial to the metric system?
FISHBURN: The metric system is fundamentally the better system and is in operation over a large part of the world. LLOYD: The metric system is far more convenient than the Imperial for making pharmaceutical preparations and stock mixtures in bulk. All new drugs in roduced have their doses given in the metric system, medical students are coming along who are more familiar with the metric than the Imperial system and we shall soon get more pescriptions written in metric than Imperial quantities. STEINMAN: We can regard ourselves as unlucky that the change has taken place now while we are practising. The Pharmaceutical are practising. The Pharmaceutical Society and the National Pharmaceutical Union suggest a period of five years for the change-over.

Radiation Sterilisation

Is it likely that the sterilisation of pharmaceutical products by radiation will be of importance, in the future, in the preparation of thermolabile substances for injection? Would not the residual radioactivity be detrimental?

FISHBURN: There are three methods of sterilisation by radiation: ultra-violet light; accelerated electron bombard-ment; and fission products. The last was presumably suggested in an attempt to find use for radioactive waste products from Harwell. There are several disadvantages, e.g. (a) to bring the fission products to the factory where the sterile products are made is too difficult—the products wou'd have to be taken to Harwell; (b) once the process has started it cannot be stopped if anything goes wrong; (c) although it does not raise the temperature of the preparation it might set off chemical reactions in complex products. The second method has already been used to some extent. It requires, however, an elaborate and costly set up. Its pro-perty of turning white glass brown may be of use in indicating that the preparation has been sterilised.

Are sterile products made in hospitals of better quality than those made by who'esale houses?

LLOYD: Generally no, but intravenous solutions prepared in hospital pharmacies are usually superior in freedom from suspended foreign matter. FISHBURN: Manufacturers must prepare on the large scale and by mechanical methods wherever practical. In a good hospital where preparations are made by skilled staff they may often be better but the manufacturer has the advantage of chemical and bacteriological control

logical control.

Can the panel define "ethical" as applied to pharmacy?

FISHBURN: An ethical medicine is one which has been tested clinically, its use is approved by a reputable medical body, and it is manufactured under suitable conditions with analytical control, STEINMAN: The Chemists Federa-

tion has its own standards committee and claims made for medicines intended for inclusion in the C.F. scheme are examined before approval. No pharmacist need be ashamed of offering any C.F. approved medicine for sale. MELVILLE: Ethical pharmacy is characterised by seffessness, putting the good of the profession as a whole and the public interest before one's own personal gain.

Films in Teaching

Does the panel consider that fi'ms and filmstrips for teaching pharmacy are a good thing? Are they likely to replace conventional teaching methods?

MELVILLE: In my department I have not found filmstrips of much use. In the crowded curriculum it is difficult to find time to use them. They are valuable adjuncts but are unlikely to replace conventional teaching methods. FISHBURN: By means of films, lectures and demonstrations by experts who could not normally visit the college can be presented.

Does the panel agree that hospital pharmacists are underpaid and that that constitutes a threat to the finances of other sections of pharmacy?

LLOYD: One of the difficulties of increasing the salaries of hospital pharmacists is that there are three organisations representing hospital pharmacists on the Whitley Council and when the Guild of Public Pharmacists feels it has a case for increased salaries it cannot go ahead until it has secured the agreement of the other two organisations. Steinman: Co-operation between all sections of pharmacy is essential to maintain and improve our financial position. Melville: The immediate threat is to hospital pharmacy itself. It is a serious state of affairs when chief pharmacists of even high category hospitals are leaving for other branches of pharmacy. FISHBURN: The main criticism of hospital pharmacists' salaries is that the salary structure presents few incentives. Mr. Tomlinson (from the floor): The Pharmaceutical Society should press for the compu'sory employment of pharmacists in hospital. Steinman: It is a disturbing fact that there are still hospitals which do not employ pharmacists.

Is it possible for hospital and retail pharmacists to play any worth-while part in pharmaceutical research and if so what can be done to encourage them?

FISHBURN: Yes, Such research may not be of great importance in itself but it is worth while from the pharmacists' point of view in increasing his interest in his work and giving a measure of presonal satisfaction. MELVILLE: Worth while? No. Research work needs special library facilities not generally available to hospital and retail pharmacists. PROFESSOR BRINDLE (from the floor): It is impossible for the ordinary pharmacist to undertake fundamental research, but there are many simple, practical problems which he can probe with benefit to himself.

COMPANY NEWS

Previous year's figures in parentheses

M. NEWMARK & CO., LTD. — Messrs. G. W. Gavan, J. Humphreys and S. Lewis have been appointed to

EVANS MEDICAL SUPPLIES, LTD.—A new overseas company has been formed in France under the name of Laboratoires Evans, S.A.

GLAXO LABORATORIES, LTD. -An interim dividend of 5 per cent., less tax, is announced on the ordinary stock (the same as last year) on account of the year ending June 30.

THOMAS MORSON & SON, LTD. -Mr. L. Jules Morson was elected chairman and Mr. Geoffrey T. Morson, managing director, of the company, upon the death of the late Thomas D. Morson.

HOWARDS OF ILFORD, LTD.-Mr. Ean C. Baillie, C.A., of Layton-Bennett, B.llingham & Co., has been appointed a director of Howards & Sons, Ltd., and of Howards of Ilford, Ltd. Mr. Edward G. Rooney of the Charterhouse Investment Trust, Ltd., has been appointed a director of Howards & Sons, Ltd.

WALTER EDEN & CO., LTD.— Mr. Marcus Newmark (director, M. Newmark & Co., Ltd., an associated company), has been elected to the board and has been appointed managing director. The business of Walter Eden & Co., Ltd., is being carried on at 5 Watling Court, Cannon Street, London, E.C.4.

SMITH & NEPHEW ASSOCIATED COMPANIES, LTD.-A dividend on the ordinary shares of 33\frac{1}{3} per cent. less income tax, for 1953 (against 25 per cent.) is recommended. The net profit of the parent company for the year amounted to £194,858 (£101,337), after providing £243,042 (£154,459) for taxation. Group profit for the year after all charges including taxation was £484,478 (£135,116) and U.K. taxation, £554,934 (£181,020). (During the year the issued ordinary share capital was increased from £625,000 to £647,000). Messrs. F ed Marshall Medhurst and Edwin Pohicacon was a prointed additional control of the contr Edwin Robinson were appointed additional directors of the company on March 30. Mr. Samuel Lovatt, for health reasons, retired from the managing directorship but continues as a director.

PEST CONTROL, LTD. — As the offer by Fisons, Ltd., to acquire the ordinary shares of Pest Control, Ltd., has now been accepted by the holders of more than 98 per cent, of the issued ordinary share capital, the board has been re-constituted as follows:—
Colonel R. P. W. Adeane, fo mer
chairman, and Mr. O'Neil-Dunne have resigned, while Mesers, F. G. C. Fison, D. J. Bi d and A. Wormald (directors, Fisons, L'd.), have been appointed to the board. Mr. F. G. C. Fison has been elec'ed the new chairman of the company; Mr. D. J. Bird and Dr. W. E. Ripper (the former managing director) have been elected vice-chairmen, and Mr. A. Wormald has been appointed managing director. Mr. Wormald will retain his position as commercial director of Fisons, Ltd.

New Companies P.C .- Private Company; R.O .- Registered Office

A, HARROP (CHEMISTS), LTD. (P.C.).—Capital £1,000. To carry on the business of pharmacists, chemists, drug-

gists, etc. Di ectors: James A. Harrop, Eunice Harrop and Cedric A. Harrop, M.P.S. R.O.: 355 Old Chester Road, Rock Ferry, Birkenhead.

XYLOCAINE, LTD. (P.C.).—Capital £2,000. To manufacture, sell, market and deal in chemicals of all kinds, etc. The first directors are not named. Solicitors: Linklaters & Paines, 6 Austin Friars, London, E.C.2. R.O.: 4 Copthall Avenue, London, E.C.2.

DELORME, LTD. (P.C).—Capital £1,000. To carry on the business of manufacturing and general chemists, herbalists and seedsmen, etc. Directors: Lillian Me'amed, Haro'd Tann, Ting Cheung Chan, R.O.: 172 Fleet Street, London, E C.4.

HARLICULTURE, LTD. (P.C.). -Capital £1,000. To carry on the business of manufacturing, agricultural and Horticultural chemists, etc. Directors:
Josephine R. F. Bonnin, Florence D.
Law. R.O.: Stafford House, Priory Avenue, Harlow, Essex.

MIDLAND AEROSOLS, LTD (P.C.).—Capital £20,000. To carry on the business of preparers of aerosol packages, and to develop and manufacture any goods for use in aerosol form for industrial, agricultural, medicinal, or other purposes, etc. Directors: Sir William Palmer, K.B.E., C.B. (director, British Optical & Precision Engineers, Ltd); Carl A. B. Lindop, O.B.E.; Frederick Cumber (director, Vita-cream, Ltd.); Frederick W. Webster cream, Ltd.); Frederick W. Webster (director, Midland Metal Spinning Co., Ltd.); Henry R. Cadman; Abraham O. Samuels (director, Connecticut Chemical Research Corporation). R.O.: 9 Clarges Street, London, W.1. Works: Wolverhampton.

Voluntary Liquidations

MEDICINAL CHEMICALS, LTD.. 36 Victoria Street, London, S.W.1. Liquidator: George W. Roberts (of the same address).

CENTRAL CHEMISTS, LTD., Martins Bank Building, Water Street, Liverpool. Liquidator: Ronald P. Booth, C.A., 5 Rumford Place, Liverpool.

A. A. KENNETT, LTD., Broadway Pharmacy, Lambourn, Berks. Liquidator: Ronald P. Booth, C.A., 14 Holborn Viaduct, London, E.C.1.

BUSINESS CHANGES

CALMIC, LTD., have opened a London sales office at 2 Mansfield Street, W.1 (telephone: Langham 8038).

A. I. JONES & SON, LTD., 132 Burnt Oak Broadway, Edgware, are closing their pharmacy section in order to expand their photographic and optical departments.

Appointments

BRAND & CO., LTD., Mayfair Works, Vauxhall, London, S.W.8, has appointed Mr. A. H. Brown, 14 Bifrons Road, Bekesbourne, Canterbury, their representative in the mid and east Kent

DISTILLERS CO. (BIOCHEMICALS), LTD., Speke, Liverpool, 19, have appointed Dr. Walter P. Kennedy (formerly senior medical officer of Health) their medical adviser from April 1 cal adviser from April 1.

THE WEEK IN PARLIAMENT

BY A MEMBER OF THE PRESS GALLERY, HOUSE OF COMMONS

Mr. E. L. MALLALIEU asked the Chancellor of the Exchequer what steps he proposed to take to prevent manufacturers, on whose goods purchase tax had been reduced from raising the price of their goods and thereby reducing the benefit intended for the consumer. In a written reply on March 30, Mr. R. A. BUTLER (Chancellor of the Exchequer) said "None." In the present competitive conditions of the market he doubted whether such alterations in the price of goods were very likely to happen, except for adequate reasons.

Merchandise Marks Acts

MR PETER THORNEYCROFT (President of the Board of Trade) told Miss F. E. Burton on April 1 that he was not aware that the public could not obtain satisfaction from retailers when it had legitimate claims for breach of warranty or otherwise; the Board of Trade could not help persons to pursue their civil remedies. Where there was evidence of an offence under the Merchandise Marks Acts, it was open to anyone to prosecute. The cases in which the Board of Trade would prosecute were those that appeared to affect the general interests of the country, or of a section of the community or of a trade.

Pay as you Earn

MR. J. A. BOYD-CARPENTER (Financial Secretary to the Treasury) told MR. W. KEENAN on April 1 that the extension of pay-as-you-earn to income tax groups not now covered by the system would require legislation, and any question of legislating on that matter must wait until the Royal Commission had reported.

Registration for Purchase Tax

Mr. F. F. A. Burden asked the Chancellor of the Exchequer on April from how many firms registration for purchase tax was withdrawn during 1953 and in how many cases it was withdrawn because of change of address, alteration of legal status and evasion or default of purchase tax

payments respectively.
MR. J. A. BOYD-CARPENTER (Financial Secretary to the Treasury) replied that 6,679 registrations had been cancelled during the year. That figure included cases where a registration had been cancelled on a change of address or legal status and re-issued. In reply to a further question Mr. Boyd-Carpenter said that £220,600 worth of proved purchase tax losses had been written off during the year ended March 31, 1953. The number of registered traders involved was 208.

MARRIAGE

WORLING — McBEATH. — At Beechgrave Church, Aberdeen, on March 20, Peter Metcalfe Worling, F.P.S., 6 Farm Close, Welwyn Garden City, Herts, to Iris McBeath, Tulloch Gardens, Dingwall. Ross.

DEATHS

ACKERLEY. — On March 25, Mr. Archibald Ackerley, M.P.S., Sunnybank, Seaview Avenue, Irby, Wirral, Ches, aged seventy-eight.

ADAMSON. — On March 28, Miss Dorothy Mary Adamson, M.P.S., 626 Durham Road, Low Fell, Gateshead, 9 co. Durham, aged fifty-two.

BARBOUR.—At Whitchester Hospital, Duns, Berwicks, on March 30, Mr. Archibald Barbour, M.P.S., Chirnside, Berwicks. Mr. Barbour qualified in 1906.

BUTLER.—On March 17, Mr. Jack Rider Butler, M.P.S., 78 Hill Top Avenue, Cheadle Hulme, Ches, aged fifty-three. Mr. Butler had been in business at 124 Blackfriars Road, Salford, 3, for the past twenty years.

CLARK.—On March 3, Mr. Wilfred Dean Clark, M.P.S., 90 Upgate, Lough, Lincs, aged sixty-five.

EACOTT. — At Kent and Canterbury hospital on April 4, Mr. Robert Gilbert Eacott, M.P.S., Teynham, Kent, aged seventy-five.

FITZSIMONS.—At the home of his daughter, Mrs. Adams, Loughnacush, Carbury, co. Kildare, recently, Mr. John Joseph Fitzsimons, L.P.S.I. Mr. Fitzsimons qualified in 1896.

KNIGHT.—On March 23, Mr. Harold Knight, M.P.S., 121 Radford Road, Coventry, Warwicks. Mr. Knight qualified in 1913.

McDORNELL.—Recently, Mrs. Mary Veronica McDonnell, M.P.S.I., Suncroft House. Bundoran, co. Donegal, Mrs. McDornell qualified in 1944 and carricd on business in Bundoran for several years.

MORRIS.—On March 23, Mr. Robert David Kendall Morris, M.P.S., 1 St. Johns Terrace, Dorchester Road, Weymouth, Dorset, Mr. Morris qualified in 1936.

MORSON.—The funeral of the late Mr. T. D. Morson (see C. & D., March 27, p. 312) was held at Wormley Parish Church, Broxbourne, Herts, on March 26. Among those present were his widow (Mrs. T. D. Morson, Messrs. A. Clifford Morson and L. Jules Morson (brothers); Mrs. W. Tutt and Mrs. G. Hopper (daughters), Messrs. P. L. Morson, B. C. Morson, A. F. Morson and G. T. Morson (nephews). Mr. John Hanbury represented the Association of British Chemical Manufacturers, and Messrs. R. Taylor and A. Duckworth the Association of British Pharmaceutical Industry. Representatives of a large number of pharmaceutical manufacturing concerns and members of the staff of Thomas Morson & Sons, Ltd., were also present.

MULHOLLAND.—On April 2, Mr. Joseph Mulholland, M.P.S., F.S.M.C., 5 Rae Strect, Dumfries, agcd sixty-one.

STOREY.—The funeral of the late Mr. A. H. Storey (see C. & D., April 3, p. 339) was held at St. Columba's Church, Knock, Belfast. The Pharmaceutical Society of Northern Ireland was represented by Mr. H. F. Moore, M.C.P.S.N.I.; and the Chemists' and Druggists' Society of Ireland by Mr. H. McKnitty, M.P.S.N.I.

SWIFT.—On March 22, Mr. Edward Hattersley Swift, M.P.S., Utopia, Oak Lane, Minster, Sheppey, Kent, aged sixty-five. Mr. Swift qualified in 1910.

WEBSTER.—On March 16, Mr. Maurice Webster, M.P.S., Fairhaven, Victoria Road, Madeley, Wellington, Salop. Mr. Webster qualified in 1908.

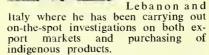
WILLIAMS. — On March 20, Mr. Allan Osborne Williams, Brynhyfryd, Llandilo, Carmarthens, aged seventytwo. Mr. Williams qualified as a chemist and druggist in 1903 and, until six years ago when he retired, was in business at Llandilo. He was formerly in business at Ebbw Vale.

PERSONALITIES

MR. JOHN RYAN, C.B.E., M.C. (a vice-chairman of the Metal Box Co., Ltd.), has recently been visiting the company's interests in the British West Indies.

MR. LIONEL L. HITCHEN (sales manager, Stafford Allen & Sons, Ltd.)

has just completed a 22,000 mile business trip to the Middle East. Since January, he has called at Spain, Portugal, North Africa, West Africa, Egypt, Sudan, East Africa, Arabia, Saudi - Arabia, the Persian Gu'f, Persia, the



MR. WILFRID RUTTER, M.P.S., has been in business in Shield Street, Newcastle, for fifty years. His jubilee was the subject of a paragraph in the Newcastle *Evening Chronicle* recently.

MISS A. T. BORROWMAN, F.P.S., who recently flew to Canada to visit a seriously ill sister in Calgary, Alberta, has been the subject of an article in the *Calgary Herald* in which her career in research and in retail pharmacy (see *C. & D.*, January 9, p. 35) were described.

MR. J. P. MARMION, F.P.S., has retired from the office of Kent county pharmacist after thirty-four years' service. He was appointed when the county council established a pharmacy in 1920 to meet the needs of its public health and we fare services. It eventually served the council's hospitals and public assistance establishments, sanatoria, mental colonies, nurseries, maternity homes and old people's homes. Because the council does not

now have the same pharmaceutical requirements, it has been decided to close the pharmacy.

INQUESTS

Under Nervous Strain. — A verdict that he took his life while the balance of his mind was disturbed was returned on Captain Eric Hutton, Cradley, nr. Malvern, at an inquest at Worcester recently. Hutton was found unconscious after having taken twenty-three sodium Amytal capsuies and a quantity of phenobarbitone tablets. His wife said he had had a breakdown that appeared to result from nervous strain. The coroner, in summing up, said "I feel it fair to say that [his medical adviser] gave a proper warning when he prescribed the drugs."

Idiosyncrasy to Aspirin.—In recording a verdict of death by misadventure on Mrs. A. H. Ball, Hyde, recently, the Manchester county coroner said: "Some people have a sensitivity to aspirin and suffer from the symptoms of an overdose when they have taken little more than a therapeutic dose." He did not think Mrs. Ball had taken an overdose with the intention of taking her own life. The medical evidence was of congestive heart failure. A pathologist from Ashton General Hospital said that the changes in the organs d d not suggest that she took a large dose, but the findings were compatible with aspirin poisoning.

Anti-freeze with Orange Squash, — The Birmingham city co.oner recorded a verdict of "Acciden'al death" on Leading Aircraftman Maurice Green, who died after joining two other youths in drinking three or four wine glasses of ethylene glycol (anti-freeze) mixed with orange squash, Kenneth Hickson, Smethwick, said that he and Green had talked of cutting down on drink. Green said they could still have a drink, but it would not cost much. He produced a vacuum flask of a liquid that looked like water and tasted like whisky. They drank it. A pathologist said that the cause of death was ethylene glycol poisoning, which had caused asphyxia and paralysis of the brain. It wou'd be unusual for the symptoms to appear immediately.

In Contact with \(\beta\)-naphthylamine.—
At an inquest in Huddersfield recently on George Hen y Fielding, a retired chemical worker, Huddersfield, who died on Feb uary 3, the borough coroner commented that it was most likely that cancer had been caused by the dead man's employment. He recorded a verdict in accordance with the medical evidence. The man's daugh'er stated that her father, a widower, had been employed by Imperial Chemical Industries, Ltd., for thirty-two years. Until 1949, when he went to Huddersfield Royal Infirmary for examination, he had enjoyed good health. In 1952 he was in Bradford Royal Infirmary for three weeks for x-ray treatment. An I.C.I. labour officer said he had reason to believe that between 1920 and 1925 Fielding had been in contact with beta-naphthylamine or benzoline. Acco.ding to the pathologist, death was due to chronic renal and heart failure as the result of cancer of the bladder.

NEW PRODUCTS AND PACKS

Medical Spray of New Design.— The Resila Eight medical spray of Britton Malcolm & Co., Ltd., 38 Southwark Bridge Road, London, S.E.1, is of new registered design. It has a tapered glass reservoir screwed into a wide black plastic base.

Improved Soda Lime.—Characteristics "so far in advance of any other carbon dioxide absorbent as to make it essentially a new product" are claimed for the new Calona soda lime marketed by the medical division of the British Oxygen Co., Ltd., Great West Road, Brentford, Middlesex.

Pholcodine Syrup.—Duncan, Flockhart & Co., Ltd., 104 Holyrood Road, Edinburgh, 8, have produced in syrup pholcodine (Duncan) a palatable syrup for the treatment of irritating or unproductive cough. In each fl. dr. the syrup contains 8 mgm. gr. ½ of pholcodine. The packs are bottles of 4, 16 and 90 fl. oz.

Stabilised Streptomycin Preparations. — Glaxo Laboratories, Ltd., Greenford, Middlesex, announce the introduction, from April 5, of a new strength (1 gm. in 3 c.c.) of stabilised injection of streptomycin sulphate. The

Now C.F.—Pharmax, Ltd., Old Hill, Chislehurst, Kent, announce that their product Diuromil is now on the Chemists Federation list.

Free Display Unit.—Alfred Franks & Bartlett Co., Ltd., are sending a display unit free with every opening order for Bartlett's sung asses.

Discontinued. — Genatosan, Ltd., Loughborough, Leics, have discontinued the manufacture of dermatological cream base (Genatosan). Warehouse stocks are now exhausted.

Distribution in Canada, — Toronto Pharmucal Co., Ltd., 462 Wellington Street West, Toronto 2B, Ontario, Canada, offer facilities for the manufacture, packaging and distribution in Canada of proprietary and ethical medicines for British manufacturers.

"Stocking" Bonus.—A special 5 per cent. bonus for stocking Derbac soap and liquid Derbac is being given on all orders for those products in minimum case quantities, or more, received before May 31. The manufactu ers are Roberts Windsor Soap Co., Ltd., Windsor and Nottingham.

"Angle-head" Denture Brush.—British Xylonite Co., Ltd. (Halex division), Highams Park, London, E.4, draw attention to their Halex "angle-head" denture brush, "styled by an artist, designed by an expert." The brush has a shaped handle and forty nylon tufts.

Boat-race Souvenir. — To all the doctors, pharmacists, nurses, etc., who were guests at their Thames-side works on boat-race day, April 3, Vitamins, Ltd., London, W.6, distributed, as a souvenir of the 100th race, a 12-p. handsomely illustrated two-colour brochure containing information about the race, the locality and the company and a map of the course.

product is issued in a pack of ten 3-c.c. (1 gm.) and a box of ten 15-c.c. (5 gm.) rubber-capped vials. From the same date stabilised injection of streptomycin sulphate (1 gm. in 2 c.c.) will be packed in rubber-capped vials and the snap-top ampoules for the 1-gm. pack will be discontinued. On April 5 also Messrs. Glaxo are introducing a stabilised injection of Dimycin (0.5 gm. streptomycin and 0.5 gm. dihydrostreptomycin in 3 c.c.) in a pack of ten 3-c.c. (1 gm.) and box of ten 15-c.c. (5 gm.) rubber-capped vials.

Immunity for Domestic Rabbits.—Burroughs Wellcome & Co., 183 Euston Road, London, N.W.1, announce that Wellcome brand myxomatosis vaccine is now available for the immunisation of domestic rabbits. Myxomatosis, the contagious, fatal virus disease first reported among wild rabbits in this country in the autumn of 1953, is expected to spread during the next few months when insect vectos are active. The vaccine prepared in the Wellcome Research Laboratories is a tissue suspension containing the virus of Shope fibroma. It is issued in containers of 5 c.c. (sufficient for ten rabbits). As it is a living virus

vaccine with a life of only fourteen days from the date of preparation, material should be ordered only to meet specific orders.

Maytime Gift Basket.—The little gift basket illustrated has been prepared by



Coty (England), Ltd., Stratford Place, London, W.1, to capture the spirit (and the sales) of May Day and the month that follows (though its appeal is likely to continue through the year. The basket contains a bottle of Muguet des Bois toilet water with spray of lilies as shown and perfumed sprig of lily of the valley.

TRADE NOTES

German-made Folic Acid.—McKesson & Robbins, Ltd., Universal House, Southwark Bridge, London, S.E.1, are now the sole distributors of folic acid manufactured by Chemische Fabrik Lappe, G.m.b.H., Bensberg-bei-Koln, Germany. Messrs. McKesson have stocks for immediate delivery to home consumers and would supply for export ex bonded warehouse.

Hospital Equipment for Costa Rica.—The British Legation at San Jose, Costa Rica, has reported to the Export Services Branch, Board of Trade, that Mr. Leo Preuss, P.O. Box 339, San Jose, seeks to represent United Kingdom manufacturers of all types of hospital equipment. Manufacturers communicating with him should advise the Branch of their action, quoting the reference ESB/4432/54, in order that the British Legation at San Jose may be informed.

Dental Patients Without Tension.—Administration of two capsules of Oblivon ten minutes before a dental operation was found in a recent series of trials to reduce the incidence of apprehension in dental patients from 43 per cent. in the control series to 5 per cent. in the treated series. Oblivon needs to be taken only ten minutes before the procedure. For children and others who cannot take capsules, Oblivon is available as an elixir. The makers are British Schering, Ltd., 229 Kensington High Street, London, W.8.

Sanitary Arts Exhibition. — The second international Exhibition of Sanitary Arts is being held at Valentino Park, Turin, May 29 to June 6, in ten sections as follows: Socialised health services; hospital organisations; sanitary installations; pharmaceutical products; love of mother and child; medicine and work; rehabilitation and re-

education of the infirm; hygiene and sport; teaching and propaganda; civil and military defence. Concurrently with the exhibition there are being held a number of specialist medical congresses (in cardiology, obstetrics and gynæcology, infectious diseases, etc.), and a medical Press congress. Further information may be obtained from the Organising Committee, 2nd Mostra Internazionale delle Arti Sanitarie. Palazzo delle Esposizioni al Valentino, Torino, Italy.

Holiday Closings. — The following have announced that their offices and factories will be closed from Thursday evening, April 15, to Tuesday morning, April 20, and that during that time urgent supplies may be obtained from John Bell & Croyden, 50 Wigmore Street, London, W.1:—BAYER PRODUCTS, LTD.; H. R. NAPP, LTD.; PAINES & BYRNE, LTD.; and PFIZER, LTD.

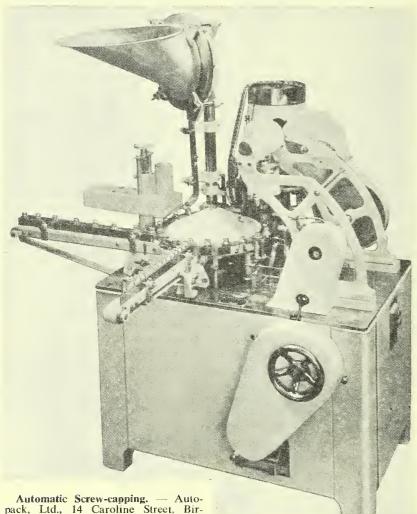
Also closed from Thursday evening till Tuesday morning will be CIBA LABORATORIES, LTD.; RICHARD DANIEL & SON, LTD., Derby and Ashton-under-Lyne; and GLAXO LABORATORIES, LTD. (Messrs. Glaxo will have a staff on duty on Saturday, April 17, until noon to deal with urgent orders.)

MAY & BAYER, LTD., and PHARMA-CEUTICAL SPECIALITIES (MAY & BAKER), LTD., will be closed from 12 noon on April 15 till Tuesday morning (emergency supplies from John Bell & Croyden).

In Huddersfield, THORNTON & ROSS, LTD., will c'ose on Monday and Tuesday, April 19 and 20 only.

In Loughborough, GENATOSAN, LTD., will also close on April 19 and 20, but the company's Glasgow depot will be closed on Easter Monday only.

MACHINERY, PLANT AND EQUIPMENT



Automatic Screw-capping. — Autopack, Ltd., 14 Caroline Street, Birmingham, are marketing a new fully automatic screw-capping machine designed to handle the widest possible range of metal and plastic screw caps up to a maximum diame'er of 2 in. The machine maintains output speeds of up to 100 per minute. Resetting for different sizes of container or cap can be quickly and simply achieved. The design is simple and obviates the necessity for maintenance by skilled engineers. The containers are conveyorfed into an intermittently rotating rotor, which passes them beneath a cap-chute fed from an automatic hopper. The caps are placed into position on the containers, given one complete turn as the container passes round the machine and then screwed down and tightened to a pre-determined tension. When the operation is completed the containers are ejected via the outlet conveyor. All working parts are fully guarded and the design of the machine makes it impossible to damage a container or cap or for a jam to occur. Safety devices stop the machine automatically immediately if it becomes overloaded.

European Apparatus Industry.—Due to appear in the second half of 1954, the Achema Year-book, 1953-55, is a European catalogue of the chemical apparatus and equipment industry. It is printed in Engl.sh, French and German, and goes to all registered participants in the Achema XI conference and exhibition, 1955.

Industrial Immersion Heater.—A 9-kilowatt immersion heater developed by the General Electric Co., Ltd., Magnet House, Kingsway W.C.2, is suitable for use in industrial water tanks and cylinders; it has a weatherproof cover with a 1-in. conduit entry. The construction of the embedded elements ensures that the heating spirals are protected from oxidation.

Mobile-unit Storage.—Storage capacity for a given floor area is enormously increased by the use of a mobile storage-unit system such as the Rolstore of Acrow (Engineers), Ltd., South Wharf, Paddington, London, W.2. Each unit in a linear series is moved to right or left on rails to give access to other series behind, so that, in effect, several sets of shelves require only the area of access of a single frontage.

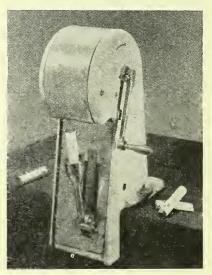
Interchangeable Joints for Apparatus. — Under the name Grip-seal,

James A. Jobling & Co., Ltd., Wear Glass Works, Sunderland, a e marketing a range of Pyrex interchangeable ground-glass joints whose sockets have cylindrical outer walls that permit a clamp to grip over the entire jaw area. A new catalogue of Pyrex laboratory and scientific glassware contains a full range of i lustrations and prices of Grip-seal joints and assemblics.

Lightweight Trolley.—The Toughness lightweight all-metal trolley manufactured by British Rawhide Belting Co., Ltd., 246 Great Portland Street, London, W.1, carries 1½ cwt., which is twelve times its own weight.

Contract Van Service. — Under a contract service operated by the Stepney Carrier Co., Ltd., 94 St. John Street, London, E.C.1, the user is supplied with a vehicle bearing his advertisement and a driver for his exclusive use. In case of breakdown or accident a substitute vehicle is always provided. The fixed charge covers garage, petrol, oil, cleaning, insurance, licences, etc.

Hand-crimped Tubes.—A machine that folds and crimps a flexile metal tube at one operation is available from Flexile Metal Co., Ltd., 796 Ho loway Road, London, N.19. When the tube is placed in a holder, the operator gives



a turn to the handle. That automatically raises the tube into position preforms it, folds it twice and crimps it before returning the tube into the starting position. The folder-crimper handles tubes from $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. in diameter.

Warm-white Fluorescent Tubes. — CROMPTON PARKINSON, LTD., Aldwych, London, W.C.2, are marketing two new ranges of fluorescent tubes: the Crompton new warm white and the C ompton de luxe warm white. The new warm white tube provides over 10 per cent. more light than was previously attainable. The de luxe tube has been specially developed to provide attractive colour renderings for certain classes of goods in shops and for the complexions

of customers. A de luxe warm white lamp has also been introduced by PHILIPS ELECTRICAL, LTD., Century House, Shaf.esbury Avenue, London, W.C.2. It is understood to blend successfully with lighting from tungsten filament lamps.

Heating Isolated Buildings. — The heating of small and isolated buildings, especially those in which people work seated, as often difficult. With an elec-

tricity supply connection available, the Nightstor electric space heater of the General Electric Co., Ltd., London, W.C.2, provides efficient and economical heating at low capital, installation, and running costs. The Nightstor heater consists of two 750-watt elements in refractory cement and a refractory aggregate, the element spirals being cast into position and kiln dried. Kilndried concrete blocks made from a re-

fractory cement form the storage medium. The elements and the concrete blocks are contained in a sheet steel body externally finished in a pleasing metallic bronze colour which tones in well with furniture and average wall decorations. The loading of each heater is 1.5 kilowatts. The charging time is eight hours. The Nightstor heater is suitable for use in areas that have been declared smokeless zones.

A MACHINE FOR STRIP-PACKING TABLETS

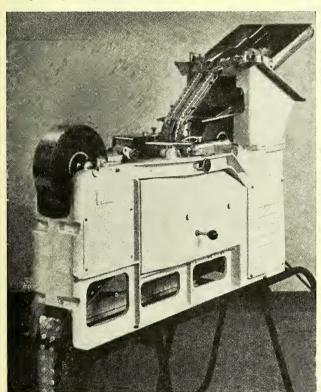
Interchangeable rollers for handling all sizes

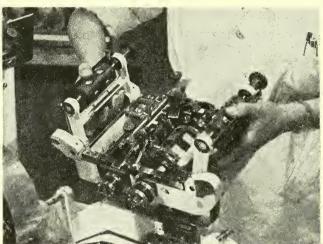
NOW in production, the Clinitape machine, first refe red to in these columns a year ago (C. & D., 1953, I. 377), cnables all sizes of tablets to be strippacked.

The machine performs automatically a full cycle of packaging operations. Designed specially for the pharmaceu-

Most of the widely used transparent, metallic or plastic films may be used as envelope. In usc, the tablets are hand-loaded into a hopper capable of holding 1,500 to 3,000 tablets, according to tablet size. The tablets are gently elevated by two low-speed rotors to a position at which they are diverted by

the storage and handling of tablets). The model illustrated packs soft tablets without breakage, and interchangeable sealing rollers enable the machine to package a wide range of tab et sizes. Auxiliary feeding units are available, or will shortly become so, for use with coated tablets, pills or capsules. Other





Left: The Clinitape machine (model for packing uncoated tablets in double row). Above: Sealing unit being exchanged for another to deal with tablets of a different size. Right: Clinitape heat-seal erimper. All are made by Morgan Fairest, Ltd., and marketed by Visual Efficiency, Ltd.



tical industry, it packs tablets, pills and captules in a continuous strip of film or foil—a method that improves the appearance of the product and facilitates storage and handling. Low initial cost and inexpensive maintenance, taken with the fact that operation and inspection can be done by one girl, make the Clinitape attractive to both small and large manufacturers requiring only one or a whole battery of machines.

Temperature Control

The model shown is designed for packing uncoated tablets in double row at a speed of 240 per minu e. Sealing is by light pressure between e ectrically heated scaling rolers fitted with an internal e'ement. Temperature is controlled and automatically maintained.

hanging gates to the two individual tracks, which support the gravity-fed tab.cts in two V-shaped grooves, thus allowing powder and broken pieces to fall through the open track. At the end of the tracks a reliable mechanical operation a lows the tablets to drop into suitably formed cavi ies in the electrically heated sealing rollers, where they are sealed between two strips of film fed from pre-loaded drums. The sealed strip is fed past a knife that provides a cut opposite each tablet for easy removal, and a second knife that cuts the strip into sections. The cut can be adjusted by a simple regulator to provide sections containing two, four, six or twelve tablets. It does not completery sever the strip, but leaves three $\frac{1}{16}$ -in. portions uncut (for the continuous strip is convenient for

feeding mechanisms will also become available for dealing with such products as small metal components. The machine, being light and easily movable, is readily transferred, if necessary. to an air-conditioned room or other part of the factory.

By means of a foot pedal, a Clinitape heat-seal crimper, also available, provides a high pressure between temperature-controlled crimping jaws and so enables Clinitape-packed tablets to be inserted in catch covers. As pressure is also controlled, the crimper may be used for sealing any type of heat-seal film or foil.

The machine is manufactured in Sheffield by Morgan Fairest, Ltd., and marketed by Visual Efficiency, Ltd., 2 The Green, Richmond, Surrey.

LOCAL DINNERS AND DANCES

BRADFORD

Praise for Technical College

BRADFORD could be proud of the part played by its technical college in the training of men for pharmacy, said MR. A. E. BROCKLEHURST (vice-president of the Pharmaceutical Society) at the annual dinner and dance of the Bradford Branch of the Society on March 10, MR, W. JOHNSON (president of the Bradford Branch) also paid tribute to the work of the Bradford Technical College.

MORECAMBE

Chemists Complimented on Shops

THE mayor of Morecambe congratulated members of Lancaster and Morecambe Branch of the Pharmaceutical Society at their annual dinner and dance recently on the condition and appearance of their shops. The mayor was responding to the toast "The Guests," proposed by Mr. Eric Smith. Mr. C. K. Brown, proposing "The Chairman" (Mr. J. Wilkinson), praised Mr. Wilkinson's work in business and outside activities. There was a record attendance of over 160 at the dinner, and as a result of competitions held during the evening almost £18 was raised for the Benevolent and Birdsgrove House Funds.

BANFF, MORAY AND NAIRN Council Member at Elgin

PRINCIPAL guests at the annual dinner of Banff, Moray and Nairn Branch of the Pharmaceutical Society at Elgin recently was PROFESSOR A. D. MACDONALD (a member of the Pharmaceutical Society's Council). Representing the local medical profession were Drs. A. C. Macdonald (vice-chairman, Banff, Moray and Nairn Executive Council); Gordon Thow (chairman, Local Medical Committee); and John Macdonald (secretary, Elgin Branch of the British Medical Association). Mr. W. A. Park represented Aberdeen and North-eastern Branch of the Pharmaceutical Society, of which he is chairman, Mr. R. S. Graham presided.

SOUTH-EAST LONDON Neighbouring Branches Support

GUESTS-OF-HONOUR at the annual dinner and dance of the South-east London Chemists' Association, held at New Coss, recently were Mr. T. Heseltinc (president of the Pharmaceutical Society) and Dr. K. R. Capper (editor of the Society's scientific publications). MR. W. H. GREEN (president of the Association) proposed the toast "The Pharmaceutical Society," to which MR. HESELTINE replied. The chairmen of the West Kent, South-west Metropolitan, West Middlesex, and Epsom and Sutton Branches of the Pharmaceutical Society were also present, as were the chairman of the London County Pharmaceutical Association and the secretary of the London Pharmaceutical Committee.

WEST LONDON

Registrar's "Soft Spot"

". . . AND ancient Britons" added

DR. H. DAVIS to the usual "Ladies and gentlemen" in addressing the Western [London] Pharmacists' Association at their annual dinner and dance on March 25. In his capacity of chairman of the British Pharmaceutical Conference he was proposing the toast "The Pharmaceutical Society." The two bodies, he thought, were a good example of symbiosis, perhaps of synergism. The toast was coupled with the name of the Society's registrar, Mr. F. W. Adams, with whom his work as chief pharmacist at the Ministry of Health brought him into close contact. The Department depended on the Society for much assistance, and it was a pleasure to work so closely with it. Mr. Adams, responding to the toast, said he had "a soft spot for the Western," because when he had first come to London his work had been "in that no-man's land between Shepherds Bush and Kensington." He claimed that certain recent changes in its constitution were ushering in a new era for the Society. Mr. B. J. Thomas (chairman of the Association) added

an unprogrammed but entertaining quota to the evening's speeches.

JERSEY

First Presidential Guest

For the first time a president of the Pharmaceutical Society was a guest at a dinner of an overseas branch, when Mr. T. Heseltine was guest of honour at the annual dinner and dance of the Jersey Branch of the Pharmaceutical Society in Jersey recently. Some seventy members and friends were present and guests included D.s. R. N. McKinstry (medical officer of health), J. Douglas Gow (president, Jersey Medical Association) and Mr. R. Pos-till (headmaster, Victoria College). Speeches were brief and humorous, and touched lightly on such subjects as doctors' calligraphy and the part played by chemists during the five years of German occupation. Mr. HESELTINE outlined the main points of the Society's new charter. MR. H. H. LeQuesne (chairman of the Branch) proposed the loval toast. MR, R. C. L. GOULD proposed the toast "The Pharmaceutical Society," to which Mr. HESELTINE replied.

PHARMACY ON THE STAGE

"Square" drama group's success with "Pink String"

TO give a good send-off to the recently re-fo.med drama group of the Square Association, no more suitable play could have been chosen than Roland Pertwee's melodramatic comedy "Pink String and Sealing Wax." Some of its tilts at pharmacists would be surefire hits before any pharmaceutical audience, and a chaiming and spirited cast at the group's performance of the play in London on April 3 made the most of them. But in fact a delighted audience was treated to much moreto clever characterisation, perfect timing, and no work for the prompter. Gerald Cox as the respected Brighton chemist and pioneering Spilsbury but heavy Victorian father gave a study that demanded an unfaltering concentration. Mollie Gilbert as his wife was properly motherly, placid, and out of her depth; and Michael Barrett as Dr. O'Shea was purest Irish in brogue

and lineament. Of the three daughters Nancy Coleman had the voice and charm to captivate her Madame Patti, Hannah Pollard was the embodiment of eager affection, and Beryl Davy an engagingly precocious and ingenuous young Eva. The villainy of Pat Sherlock as street woman and murderess was incredible in one so young, while Peter Elworthy as the inventive and frustrated son and Robin Drain as the young barrister and suitor were admirably cast. Prodigies of stage-craft, too, were performed to provide a proper setting under severe restrictions. But what stood out above all was the stamp of quality, s.yle and finish imposed by the producer, John Whitehead, whose directing mind was everywhere in evidence. The Square Association, if it can retain his services, can rest assured that its drama group will continue to flourish.



Eva Strachan shows her sister and pharmacist father the bottle she had seen taken from the shelf.



PHARMACY IN OLD CEYLON

At a time when Her Majesty the Queen, accompanied by the Duke of Edinburgh, is arriving in Ceylon on a State visit it is of interest to recall a "Treatise on the Cingalese Practice of Medicine," written in 1822 by an unknown English physician who gained his material from native sources

By Laurence Dopson

In the Royal College of Physicians of London there is preserved a "Treatise on the Cingalese Practice of Medicine" written in 1822 by an unknown English doctor. The treatise, based on material supplied by local wedarales or native physicians, gives a systematic picture of prescribing in Ceylon according to formulas laid down in the indigenous written materia medica. It shows that Ceylon was then exporting some medicines to India and importing materials for others. It is clear that, under the local system of medical practice, the doctor was not differentiated from the druggist, though it is noted that certain ingredients for medicines were purchased in the bazaars.

The manuscript is a blue paper-covered, foolscap-size book, written in a neat hand on thin paper, and bearing the date line "Alipoet, 10 August, 1822." It was presented to the College ten years later and is now in the library. An inscription states that it is "from the unpublished records of the Ceylon Literary and Agricultural Society."

Medicinal Values Attributed to Trees

"It is a belief entertained by the Singalese," states the treatise, "that every plant or tree has a medicinal virtue provided it was [sic] properly administered. Hence it is that there are so many plants and trees met with on Ceylon which have medicinal uses ascribed to them, but whether suppositious or real, they would require to be ascertained by actual administration according to the forms prescribed by the Singalese, and by observation of the effects produced. For superstition seems to have rendered a Singalese incapable of judging of or even of seeing natural effects, whether from a species of low cunning or from a wish to deceive, but he is certain to ascribe effects, if he is sensible of them at all, to any other cause rather than the natural one.

Medicine which the Singalese in this part of the country have recourse to is most commonly a secondary resource for the cure of a disease. It is generally resorted to after the invocations of devils, which they blame for all sorts of evils, have failed. The evil spirit is even blamed when medicine fails to produce the desired or wished-for eae t."

Prior to the administration of even a single dose of medicine, a short address or prayer was always made by the Wedarale to "some supposed spirit whose evil designs might counteract the beneficial effects of the medicines."

The author gives a list of 247 plants and other substances, but says that he is certain that it was far from containing the whole. Against the native name he includes the Linnean classification, for he personally examined all the species mentioned.

"The plants used by the Singalese as medicine in the interior of the country are in the greater proportion gathered from the jungle at the instant they are required for use. However, there are articles which form ingredients in their prescriptions for pills, etc., which they purchase in the bazaars, particularly gynde gun (sulphur), Heirial (yellow arsenic), Rahadia or Rassadia (purified mercury), Sudilingum (native cinnabar), etc. There are also some kinds of woods used by them in medicine, which they also buy in the bazaars as Rat Handung (red sandal wood), Suduhandung (white sandal wood) and some others. . . Aromatics of different kinds constitute permanent ingredients in almost

every one of their prescriptions, and for the greatest number they are indebted to other countries, and, of course, these articles are imported, such as cloves, maces, nutmegs, coriander seeds, etc. A species of nutmeg is found as native of this Island, agreeing in every particular with the imported one, but in the strength of its flavour."

Four items are listed as being medicinal exports from Ceylon. In one the seed was gathered when ripe and dried in the shade. In another the nut contained in the berry was cut into halves and dried, also in the shade. Three different articles, when sufficiently dry, were put into a bag mixed together, and were thus exported to the coast of India, where they were used by the natives as medicine. "The Wedarales say that they may be kept for years without losing their medicinal virtues." The cinnamon bark was also an article of commerce.

The method of packing for transport the articles for medicines which were imported from India makes interesting reading. Abing, for instance, came "in round Balls"; Balal-lunu "in bags in lumps"; Elu-marindu "in small wooden boxes"; Rahadia "in flasks"; Rat handung "in pieces"; and Watehinalu-alla "in bags cut into slices."

The weight used in compounding Singalese medicines was the *madara*, which was equivalent to 4 grains; 20 madara made one *Kalanda*. The "bamboo measure" for fluids was "somewhat more than an English pint." Most of the prescriptions include "watera"—"river water."

As might be expected, polypharmacy was the basis of the Singalese materia medica. Thus a purgative for fevers in general included twenty-eight ingredients. ("Grind for two days with the expressed juice and form the pills of the size of pepper. 1 Pill a dose given with an ounce of the expressed juice of the bark of Ghaetha nitulgaha as a purgative and diaphoretic").

"Grind on a curry stone for one day with sour orange juice, for another day with honey and form the mass into pills of the size of a peppercorn," is another direction.

Believed Origins of Fevers

The Singalese Wedarales ascribed fevers to three different causes—to bile, to wind, and to phlegm—after the manner of the doctrine of the humours. In a prescription for fever arising from wind the items had to be pounded in a rice pounder, "and boil from four measures to one and strain through a cloth. $\frac{1}{3}$ a dose in the morning fastings." In another prescription for the same condition the directions include: "Boil from 8 cup fulls to one cup. $\frac{1}{3}$ to be given every morning and evening as a dose, with a little *Tipili* (long pepper)."

In some instances the medicines were to be dissolved in lime juice. Honey was another medium, To form one medicine, two pills were to be dissolved in about 2 oz. of water, then one-third of the powder was to be mixed with it, and the whole to be swallowed.

External as well as internal medicines were given as purgatives. The paste was applied around the navel. Where a woman was unable, owing to exhaustion, to bring forth a child, a mixture was to be ground on a curry stone, and a quantity of this substance was "to be rubbed into the region of the stomach, soles of the feet, and palms of the hand."

For an ointment for sore eyes, the requirements were surprisingly simple and doubtless quite effective—"salt gathered from the sand in the sea beach" and one kalanda of Kiri Kundi. "Roast the Kiri Kundi, and grind with the salt and a little lime juice. Mix a little with some fresh cow's butter, and apply to the inside of the eyelids and surface of the eye itself."

"To form a mass," say the directions for one of the Singalese remedies for cholera, "take a hard boiled egg, remove the shell and cut it into halves, remove the yolk and put the mass in its place, and cover it with the other half of the white of the egg. Put this into a small cup, made of baked clay, and place the cup containing the medicine in a small fire made of coconut shells till the white of the egg turns quite black.

The medicine is now to be taken out, and to be pounded on a curry stone till finely pulverized; it is then to be formed into a mass with expressed ginger juice fit to be

made into one grain pill.'

Remedies for various conditions are set out—hæmorrhage, "itch," snake bite, obstetrical and gynæcological conditions (including the induction of abortion), and so on. It is noteworthy that venereal disease was established on the island, and the writer remarks that "the practice of enjoying cold baths whilst taking mercury for syphilis is contrary to the practice in Europe but appears universal in this part of the world."

Cultivation of Medicinal Plants

In addition to collecting plants and seeds and fruits from the jungle, the Singalese cultivated some of them for the medicinal value. By their houses the Singalese had what they called their gardens, though they would not be recognised as such by Europeans. The writer describes the two methods of cultivation which he had seen practised by the Singalese in the interior of the country. The first was the cultivation of rice by irrigation, the second the formation of henna grounds, established "by cutting down the jungle and clearing a space of the necessary extent. The henna fields are generally on the tops of hills or on sl'ghtly elevated situations. The jungle is cut down, a slight fence is made,

and the remaining part, when sufficiently dry, is burnt. The ashes serve as manure and destroy the insects. The surface of the ground being scraped up by a kind of hoe or mamoty as it is called, and the larger stones removed, the seeds, consisting of Koeraean, mustard seed and of different oleracious vegetables, are sown seemingly jumbled together.

. . Pumpkin cucumbers, yams and Indian corn are also planted in the same grounds." Some medicinal plants were sown in the henna fields, but the majority are listed as being put "near the habitation of the Singalese."

The writer says that the Wedarales never attempted innovations for the relief of their patients, but strictly followed the directions written down in their books. Those books were written in Pali, "the language of all their learned subjects, religious as well as medical." The library of the Royal College of Physicians of London has among its collection of Oriental manuscripts an example of one of those Pali "books." It is described in the catalogue as a Vattoru-Pota or native doctor's manual. Dated about 1800, it consists of small leaves (of palm) or folios each about 4 in. long and $1\frac{1}{2}$ in. deep, inscribed in a neat script and secured to pieces of wood at each end by pieces of string running through two sets of holes, in the same way that the cards are fixed by a rod in the drawers of library catalouges-in fact, the whole thing, which could easily be carried, looks like a card index.

The unknown Englishman describes how he obtained the information for this Singalese "pharmacopæia." "I had the Wedarale seated in my room," he writes, "with his book in his hand from which he read the several prescriptions as they occurred under the heads of the different discases, and with the assistance of an interpreter I wrote the names down as they were pronounced to me." The author stated that he intended to continue his studies. As it is he has preserved a valuable record of the materia medica of another civilization.

"That cures are performed by the Wedarales admits of no doubt," he concludes, "and in the manner mentioned by prescribing with the books in their hand."

The author thanks the Harveian librarian (Professor E. C. Dodds) for permission to quote from the MSS. in the possession of the Royal College of Physicians of London.

MEDICAL ABSTRACTS

NEOMYCIN AND SKIN DISEASES

The value of noomycin externally against skin diseases associated with the fo mation of pus has been demonstrated by Church (British Medical Journal 1954, 1, 314) in an investigation which was prompted by the consideration that the drug did not have the disadvantages, common among antibiotics, of frequently producing resistant strains of disease-causing organisms and of rendering the patient not amenable to treatment with the therapeutic agent. Also neomycin caused little cutaneous reaction. Ninety-three patients with impetigo, sycosis barbæ, ecthyma, infected eczema and other skin diseases were treated with an ointment containing 5 mgm. of neomycin per gm. Aqueous and non-aqueous bases were used but no appreciable difference in the clinical results of the two types of ointment was found. The results of the treatment were, with impetigo, similar to those of aureomycin, chloramphenicol or bacitracin. For sycosis barbæ neomycin was shown to be significantly better than any other antibiotic except aureomycin. The drug controlled, without producing sensitisation reactions, the other skin diseases on which it was tried and the author suggests neomycin ointment as a routine treatment for impetigo and as the first line of attack in sycosis barbæ.

REACTION FROM POLYMYXIN B

Severe reaction to polymyxin B is reported by McGill and Mendel (*Lancet*, 1953. **2.** 1293) in a patient who was being successfully treated for meningitis caused by the *Bacterium fæcalis-alkaligenes*. The drug was given intramuscularly

(250,000 units every six hours) and intrathecally (100,000 units twice a day). Pain occurred at the sites of the intramuscular injections, and the intrathecal injections were discontinued owing to the intense reaction. A lesion affecting the termination of the spinal cord developed after three weeks' treatment, but treatment with streptokinase brought about an improvement in the patient's condition. The authors urge care in using polymyxin B intrathecally, since, though of undoubted value, it is an irritant when used intramuscularly. Treatment should commence with dilute solutions, gradually increasing the concentration in subsequent injections.

CYANOCOBALAMIN AS A SNUFF

An advantageous and successful method of administering vitamin B₁₂ is described by Israels and Shubert (Lancet, 1954. 1. 341) as an alternative to intramuscular injection. 100 microgm. of the drug was diluted with a non-irritant powder so that the total bulk was about 0·3 mil. The powder was put up in a perforated capsule and loaded into a special insufflator. The drug was administered to a patient by puffing the powder up his nostrils while he was inhaling. The method was tried on five pa'ien's and the results showed that the doses required were of the same order as those given intramuscular ly. No patient complained of nasal irritation. The authors say that the method is useful whenever intramuscular injection is not desirable but could not be used for patients with chronic catarrh or nasal obstruction. The main advantages are the economical costs and that the material can be self-administered by the patient without difficulty.



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Carry On, Industry

DESCRIBED by the Chancellor himself as a "Carry on Budget," the taxation proposals for 1954 do contain, among the few changes made, one or two features that are of importance or interest to the pharmaceutical and fine chemical industry and to owners of businesses.

His most important proposal for industry was the new tax-free investment allowance applying immediately to capital expenditure on new plant and premises. Previously the costs of investment in plant, machinery and industrial building were offset against gross profits during the life of the assets by means of depreciation allowances and an initial allowance merely anticipated a part of the annual allowances, so that tax liability was less in the year in which investment took place but often larger later on. The new investment allowance will do more by giving a tax-free allowance equal to part of the investment cost and will be given in addition to the full annual depreciation allowances. Plant and buildings used for scientific research, which previously did not attract initial allowances, will now benefit. We urged in these columns only last week that the Government should encourage firms to expand research, and it is welcome that some help is to be given at last in that direction.

It will be recalled that during 1953 many companies operated a variety of schemes of reorganisation and reconstruction (the methods were outlined in the C. & D., 1953.II.63) with the object of saving considerable amounts of income tax. The Chancellor has now stopped that loophole, and a business in which three-quarters or more of the holding belongs to the same parties after, as belonged before, the change will not now benefit.

Key Industry Duty, so important to the British chemical industry and due to end in August, is being con-

tinued for five years.

The crippling effect of estate duty, especially on small family businesses, another subject dealt with in these columns (C. & D., 1953.II.472), has persuaded the Chancellor to give some relief, which should broadly eliminate hardship cases. In fact, some critics suggest that the proposals go too far, and may create a new privileged class.

Unlike 1953, the year brought no changes in purchase tax rates. None, of course, were expected. The Finance Bill, however, will contain several proposals to tighten up the administration of the tax.

The Budget will cause disappointment among tax-

payers generally for there are no personal reliefs, direct or indirect. Whether the much-needed higher productivity can be achieved or maintained without greater incentives remains to be seen.

Export Subsidy War?

THE chance that success will crown the efforts of the Federation of British Industries in persuading its opposite numbers in other countries to do away with export incentive schemes (which are nothing but hidden subsidies) appears to be diminishing. It will be recalled that, in November 1953 (see C. & D., 1953. II. 470), agreement was reached among many countries within the Organisation for European Economic Cooperation that they should not operate any fresh incentive schemes for three months (later extended to six Meanwhile it was hoped that the various governments would terminate such schemes as already existed. The time limit is now nearly up, and little progress has been made to that end. At a recent meeting of the Council of European Industrial Federation, "great disappointment" was expressed that the governments had made no progress. The meeting pointed out that it might not be possible to delay pressure for the introduction of counter measures for more than a short time, and that a full-scale competitive race in export subsidies would quite conceivably occur, involving great danger to the improved economies of the European countries.

The Financial Times points out that Italy has a scheme ready for immediate legislative action, though that country has not previously participated in such schemes. The chief stumbling block is apparently the Germans with their tax-rebate scheme for exporters. With that tax advantage (State subsidy is a more realistic term) the German exporter can naturally undercut the British exporter, although in all other respects he may be his competitive equal.

Machines to Speed Production

THE Economic Survey for 1954, issued recently, contains a warning that, to provide for the future development of Britain's economy, increases are needed in the resources available for exports and industrial development. That points the need for British manufacturers to expand their technical facilities for production, in part by investing more money in factory plant and equipment. The survey gives the increase in investment on plant and machinery from 1952 to 1953 as £10 millions. That amount appears small when compared with the increase in investment on housing (£135 millions).

In this Annual Machinery Number of THE CHEMIST AND DRUGGIST we have dealt less with equipment directly concerned with the manufacture of finished products than with machines that can enormously speed production by ancillary services (such as a labourer would provide for his craftsman master). On pp. 376-80 are described machines, varying in capacity (some manually operated), that even the most modest smallscale manufacturer can use with advantage.

A second main subject is plant for ensuring sterility in pharmaceutical products. Such equipment is reviewed in accordance with the principles on which it is based, and the information should provide a valuable comparison of the apparatus available to the manufacturer and laboratory worker alike.

No-par-value Shares

The report was issued on March 31 of a committee set up by the Board of Trade in December 1952 to consider whether the law on shares of no par value should be amended and what safeguards were required for investors and the public interest.

No-par-value shares have for some time been permissible in the United States and Canada and also, though under a different system, in Belgium. In Britain the last committee that sat on company law amendment and whose work gave rise to the Companies Act, 1948, reiterated its opposition to the introduction of such shares in this country. A private member's bill to legalise their issue was "talked out." Interest in the subject, however, continued to grow.

With one exception, members of the 1952 committee are agreed that there is a strong case for no-par-value shares, which are regarded as a logical development of company law and practice, and that they should be permitted to both private and public companies.

What are no-par-value shares? In Belgium they are referred to as "shares without mention of value"—a description that points the meaning. Under the Companies Acts, a limited company must register its share capital, which must be divided into shares of a fixed amount. That fixed, nominal value of a share may be quite divorced from its real worth in the undertaking: it may, in fact, be misleading or meaningless. With shares of no par value—that is, without any monetary sign attached to them—the investor is freed from a misconception that emphatic changes in price levels only serve to magnify. A share of no par value is accordingly a stake in the worth of the company that grows or declines as that worth increases or decreases.

With nominal capital, dividends are expressed as a percentage of the capital, and that may give a false impression of profits earned and yield on investment. Dividends declared are, of course, related to reserves retained in the business, as well as to nominal capital. Expressed as so much per cent. on nominal capital alone, they may appear excessively high. Shares of no par value enable dividends to be declared as an amount per share, thus obviating "a potent source of misunderstanding." A company may declare a dividend as so much per share even when a nominal value exists, but it is inevitably translated into a percentage of such value. Further advantages are stated to follow the permission to issue such shares. Instead of issuing bonus shares, a company may merely split shares of no par value and achieve the same effect. New issues may be obtained at a fair market value and the whole procedure of issuing shares at a premium may be thus avoided. Raising additional capital should be facilitated, since otherwise shares could not be issued for less than their nominal value without the sanction of the court.

What is to be said against the new system? Even when a dividend is shown as an amount per share the accounts must still be turned to if the rate of return on capital invested is to be computed. But dividend announcements could, of course, include the effective yield on the shares. It has been put forward that manipulations might be made by unscrupulous promoters and that stock bonuses might be surreptitiously given without the knowledge of shareholders. The

majority of the committee report that the opportunity for malpractice would be no greater under the new system than under the old and "that reliance can be placed on the ordinary standards of conduct, which in this country are high." They recommend that the whole proceeds of issue should be taken to capital account and not distributed; that the present stringent provisions governing prospectuses, etc., should be applied to the shares; and that, whilst conversion from either system to the other should be permissible by special resolution of the company, the whole of the ordinary share capital should be in one or the other category.

The system, they state, should be confined to ordinary share capital. "We feel that a fixed dividend must have a relation to the sum on which it is paid, and that that, as well as the repayment of a fixed sum in a winding-up, is out of keeping with the concept of no par value." Preference shares, therefore, would not be covered.

The dissenting member of the committee regards the majority view as placing too much emphasis on technical aspects and the wishes of professional investors. He attaches more importance "than they appear to do" to the interests of the workers and small shareholders, holding that the probable result would be greater bewilderment of the ordinary investor and suspicion among workpeople, as was suggested by the general council of the Trades Union Congress. He considers the present system is flexible enough to achieve the purposes required.

From evidence submitted it appears that current accounting standards and Stock Exchange rules have prevented the public interest in other countries from being adversely affected by the use, in itself, of shares of no par value. A common terminology should facilitate international trade and the introduction of capital into this country. Historically, the reason for fixing nominal values of shares was the practice of issuing partly paid-up shares for full payment in due course. That practice is now rare.

CORRESPONDENCE

Letters when received must hear the name and address of the sender, not necessarily for publication. The Editor does not hold himself responsible for the views expressed.

SYRUP OF CAMPHOR SIR,—One can raiely que y the C. & D, but I think the syrup of camphor your inquirer wants (April 3, p. 353) is one that originated years ago at the Bristol Royal Infirmary. When I was in Bristol fifty years ago, it had a most extensive retail sa'e. I must have sold gattons of it. Every chemist stocked it and sold it f eely. The sale spread to the counties adjacent. It is a most effective cough mixture (or linctus) for adults. Leaving Bristol in 1919, I int oduced it to this part of W.Itshire, where I found a steady demand for it until my retirement and the advent of the Nat.onal Health Service. The sy up has, I be leve, been only partly supplanted by linct. scillæ op., etc., on EC10's. I used occasionally to get: "I want a la ge bott e of that syrup of camphor of yours to take back to London, I cannot get it the e," and similar requests. Pe haps your inquirer has met with such a would-be customer. He need not t ouble about the formula. It was lifted into the B.P.C. as syr, camph. co. some years ago and I presume is still in. [The ti le is now one of the synonyms of syrupus opii camphoratus, B.P.C.
—EDITOR.] The syrup may be obtained without difficulty from who'esalers under its official title. It is not suitable for ehildren. I should mention that no eustomer uses the word "eompound." MARTIN P. WALKER PEWSEY, WILTS

PHARMACEUTICAL MACHINERY AND PLANT

Apparatus for **STERILISATION**

Examples of equipment available for the production of bacteria-free preparations by heat or ultra-viole! irradiation

HE process of sterilisation is aimed at removing from or destroying all living organisms in the material desired sterile. Apart from specialised methods, such as the chemical sterilisation of surgical catgut by immession in a solution of iodine, the destruction of organisms is effected by heat.

For heat sterilisation the British Pharmacopæia prescribes the temperature to which mate ial must be subjected and the length of time for which it must be so treated. In order to meet those requirements the pharmacist or manufacturer needs apparatus that is easily controlled. For solutions of thermostable drugs, the process is to heat them in sealed containers in an autoclave so that the entire volume of liquid is maintained at 115-16° C. for thirty minutes. In essence, an autoclave is a vessel capable of being totally enclosed, in which water and steam may be heated above 100° C. The temperature is usually regulated by adjusting the internal pressure (shown on a gauge) to a desired level.

Pharmaceutical Autoclaves

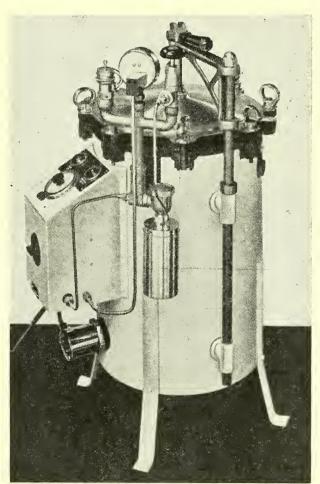
An autoclave that requires no attention during the sterilising operation, and works at any pressure from 10 to 25°1b. per sq. in., is supplied by BAIRD & TATLOCK (LONDON), LTD., Freshwater Road, Chadwell Heath, Essex. The operator simply places the articles in the autoc ave, clamps down the lid, sets an automatic pressure controller for the required pressure and a timer for the required period of sterilisation. When a pilot light indicates that the operation is finished he removes the articles. A steam valve allows the air to escape before pressure is built up, then closes automatically to ensure the correct relationship between pressure and temperature. The timer can be set for periods up to one hour and it is automatically switched on when the working pressure is reached. A pressure controller switches the electric heater on and off as necessary throughout the operation so as to maintain the pressure at the correct level within ± 1 lb. per sq. in. At the end of the operation the timer switches the heater off finally. When the temperature has fallen to 100° C. the automatic steam valve opens, and the pilot light is switched on. The makers state that, in addition to the labour-saving advantages of the model, another advantage is that it consumes less power than the conventional type of autoclave, as the pressure control prevents waste. As the amount of steam escaping is negligible, one filling of water serves many times.

A Square-section Autoclave

An autoclave with boiler enclosed in a rigid steel squaresection body is made by A. GALLENKAMP & Co., LTD., 17 Sun Street, London, E.C.2. The boiler (18 in. in diameter and 18½ in. deep internally) is of heavy gauge copper with a cast gun-metal top rim. The lid is cast in a light alloy and is hinged at the back, fitted with a lifting handle in front and secured by bolts tightened with plastic-covered hand grips. The steelwork is rust-proofed and finished in grey stoved enamel. It is designed for safety and ease in handling. Steam-, gas- or electrically-heated types are availab'e. The pressure gauge is fixed in the steel case, and a pocket (to take a mercury thermometer for direct temperature readings) is fitted. The autoclave works to a maximum pressure of 30 lb. per sq. in. The electric model is heated by means of an immersion element screwed into the bottom of the boiler and regulated by thermostat. The gas-heated type is fitted with a thermostat working in conjunction

with a gas-relay valve. Combustion products are exhausted through a chimney that can be connected to a flue.

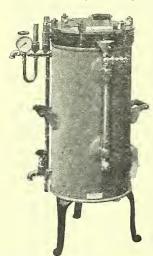
One of the features of the Sphinx autoclave made by JOSEPH SANKEY & SONS, LTD., Bilston, Staffs, is the ovalshaped lid which fits under the lip of the boiler so that upward pressure is needed to keep it closed. The advantage of that arrangement is that when the autoclave is in use the pressure inside keeps the lid closed instead of tending to lift it off. The lid is kept in position by a bar which fits under a fulcrum on the handle (fixed to the lid) and to which upward pressure is applied by a single screw. The boiler is made from decay-proof stainless steel and a blowoff valve is fitted to the side. The autoclave is heated on a gas ring. A thermostat that controls the supply of gas to the burner and hence the temperature inside the autoclave is incorporated, and is sensitive to changes in temperature, not to changes in pressure. It is not adjusted when the instrument is supplied, so that the user may set it according to his own requirements by following instructions supplied with the autoclave. A gland to take a mercury-in-glass thermometer is fitted on the lid and when not being used can be sealed with a special blank nut provided. Also fitted



Automatic electrically-operated autoclave (Baird & Tatlock (London), Ltd.).

to the lid are a pressure gauge calibrated for pressure and temperature readings, two spring-loaded safety valves which open if the internal pressure reaches 20 lb. per sq. in., and a pressure regulator valve which can be set to whistle at 5, 10, 15 or 20 lb. pressure. Two sizes are available: 11 in. height x $10\frac{1}{2}$ internal diameter; and 18 x $10\frac{1}{2}$ in.

For dressings sterilisation, J. W. Towers & Co., Ltd., Victoria House, Widnes, Lancs, make autoclaves in two



ranges of sizes, for working at pressures up to 15 lb. per sq. in. or up to 45 lb. per sq. in. The boiler is made of hard rolled copper with brazed joints to obviate damage should the apparatus accidentally run dry. An inner chamber of tinned copper keeps the dressings away from contact with the water. The lid is secured with six bolts with conical seatings, and capable of being secured either manually or with a spanner. The whole is mounted in an outer case of leadcoated steel fitted with three legs. Internal diameters of the autoclaves are from 12 to 16 in. Gas-, steam- and electrically-heated models are avail-

able. The illustration shows an electrically-heated autoclave for pressures up to 45 lb. per sq. in.

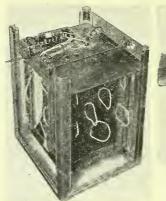
The Express portable autoclave, for which the distributors are JAMES WOOLLEY, SONS & Co., LTD., Victoria Bridge, Manchester, 3, is constructed in a die-cast alloy and is of conventional design, having a lid clamped on with eight wing nuts. A draw-off cock is fitted in the side. It can be set to either 10 or 15 lb. per sq. in. by a simple adjustment of the safety valve so that drugs or dressings may be sterilised. For dispensary use, a removable inner chamber (and if required a specially fitting dressings drum) is supplied with the autoclave. A standard gas and an electric (consumption, $1\frac{3}{4}$ units per hour) models are available.

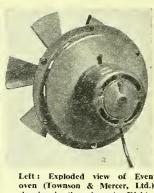
Hot-air Ovens

For the sterilisation of oily solutions and dry powders, dry heating at a temperature of 150° C, for one hour is necessary. Ovens used for that purpose have to be carefully designed to ensure not only that the correct temperature is maintained throughout the time of sterilisation but also that the temperature is constant throughout the whole interior of the oven. Electricity is the most satisfactory form of heat

supply for use with sterilising ovens, as it is more readily controlled than are other sources of heat, even when no thermostat is incorporated in the oven.

The general-purpose oven made by A. GALLENKAMP & Co., LTD., may be used for drying or for the performance of laboratory and industrial processes, as well as for sterilisation. The body is of heavy-gauge sheet steel with double walls 2 in. apart, and glass-fibre lagging between them. The control panel is immediately beneath the oven, and the whole is mounted on a ridged steel stand that has a metal shelf of the same dimensions as the base of the oven, which also has ventilators top and bottom and double doors. In one of the doors is recessed a lens-fronted thermometer, and the electrical heating elements are arranged in the bottom and sides so as to give uniform heat throughout the working space (26 x 28



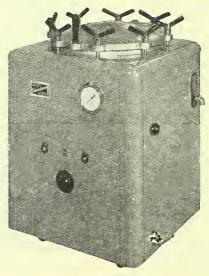


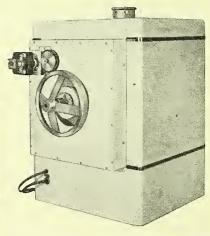
oven (Townson & Mercer, Ltd.) showing heating elements. Right: Centrifugal fan used in the oven.

x 24 in.). A Gallenkamp-Sunvic thermostat gives temperature control within 0.25° C. up to the maximum operating temperature of 250° C. An indicator light to show the operation of the thermostat is incorporated. The thermostat has an arbitrary scale.

The Universal electric oven made by J. W. Towers & Co., Ltd., is available in two forms: for temperatures up to 200° C. (thermostatically controlled to within 1° C.) and for temperatures up to 300° C. (within 2° C.). The 200° model is in three sizes: 14 (height) x 12 x 12 in., 17 x 15 x 15 in., and 20 x 18 x 18 in. interior; the 300° model in two: 14 x 12 x 12 in. and 17 x 15 x 15 in. interior. There are no electrical contacts in the working space, and the elements are placed at the sides and bottom and operate at black heat. The ovens are lagged with glass silk and the outer case is of cream stove-enamelled rust-proofed sheet steel. Adjustable ventilators are fitted to the top of the oven and to the door. The top ventilator can take a the mometer for a direct reading of the internal temperature. The thermostat is adjusted with a dial calibrated in degrees C.

The Even oven made by Townson & MERCER, LTD., Beddington Lane, Croydon, is supplied either with or without an air circulating fan. The oven is heated by twenty-four electric heaters, all round in one continuous length and clamped all over the outside of the inner chamber by aluminium bands. There are no electrical parts within the working space; both the heaters and a specially designed temperature regulator work on the outside of the oven. The space between the inner chamber and the outer walls is lagged with glass wool, as is the door itself, which is arranged to open with the left hand, leaving the right free to insert or remove articles. Two sizes are available: 16 (height) x 14 x 14 in, and 22 x 16 x 16 in. For sterilisation work the manufacturers recommend the use of an oven





Left: 990 Autoclave in steel body (A. Gallenkamp & Co., Ltd.). Right: Rear view of Universal electric oven (J. W. Towers & Co., Ltd.).

fitted with a fan. The blades of this are designed so that, when the fan is in use, air is moved centrifugally, from the centre outwards. The makers claim that the fan not only makes for greater evenness of temperature throughout the oven but also enables the articles to heat up more quickly. The ovens operate up to 250° C. Ventilation can be controlled by rotating the plastic cap of a ventilator at the top of the oven. The cap is drilled to take a thermometer.

Sterilising by Ultra-violet rays

In the preparation of sterile medicines by aseptic dispensing the main source of possible contamination is from air-borne bacteria. One way of meeting this problem is by the use of ultra-violet rays, Experiments have shown that the most effective rays for bactericidal purposes are those of wavelengths 2,500-2,700 Angström units. All the apparatus described below is designed to emit rays of which a high percentage are of wavelength 2,537 Angström units, as that figure represents the most efficient germ-killing radiation of all. In pharmaceutical practice, ultra-violet units have found application in aseptic filling rooms, either fitted to the ceiling to decontaminate the whole room or, for the most delicate operations such as filling streptomycin vials, within an aseptic dispensing screen as an added precaution.

Apart from their purely pharmaceutical applications, ultra-vio et units are useful in any factory or office to help prevent the transmission of infection by airborne organisms, many of which are expelled into the air when a person sneezes. Many diseases, including influenza, the common cold, pneumonia, septic throat, whooping cough and poliomyelitis may be communicated by airborne bacteria. The units consume about as much electricity as a



Buvan ultra-violet air decontaminating unit (Barber Medico-electronic Laboratories, Ltd.).

single lamp used to illuminate a small dining-room in a private house. The energy required to kill 1,250,000 bacteria is one microwatt-second when the wavelength of the rays used is 2,537 Angström units. In addition to preventing infection, ultra-violet rays also inhibit the production of slime, rancidity or unpleasant odours by bacteria. The units are installed so that in an office or factory the rays are directed upwards, or when used in aseptic filling rooms, downwards. When the radiation is upwards, the apparatus treats the air as it is circulated. Downward radiation is necessary in aseptic filling rooms so that bacteria may be destroyed at the site of operations.

The Buvan ultra-violet unit for fixing below the ceiling of a fac'o y room, sterile filing hall, or office consists of an ultra-violet tube fitted with a reflector. The unit may be installed so that the rays are direc ed upwards or downwards. The source of radiation is a 20-in, fused quartz tube and the apparatus treats 4,000 to 5,000 cu. ft. of air space. The unit is designed so that some ozone is produced by the action of the rays on the oxygen in the air. The makers (BARBER MEDICO-ELECTRONIC LABORATORIES, LTD., Leach



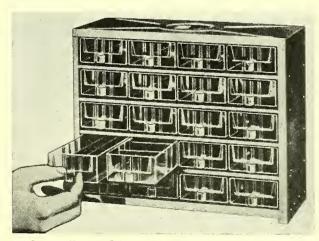
Aseptic dispensing cabinet fitted with an ultra-violet ray tube (Hanovia, Ltd.).

Street, Birmingham), state that the combined application of radiant energy and ozone to a volume of air produces an optimal condition for the simultaneous destruction of microorganisms and offensive odours.

HANOVIA, LTD., Slough, supply ultra-violet tubes of various designs either straight or U-shaped. Bactericidal units containing one or more tubes are also available, and they may be obtained for either upward or downward radiation. The company also manufacture an aseptic dispensing screen made in transparent plastic and fitted with a 12-in. ultra-violet tube which irradiates the interior of the screen. The floor area of the screen is 24 x 24 in.

In the Hyginare ultra-violet unit (consisting of an ultra-violet tube housed in a reflector) made by PERIHEL, LTD., Edge Street, London, W.8, the tube is housed in a quartzoid envelope that combines highest transparency to rays of optimal wavelength with low transparency for rays of the shorter wavelengths that are responsible for producing ozone. In that way the unit does not generate odour. The units may be installed for either upward or direct downward radiation.

VISIBLE STORAGE FILING IN AMERICA



FOR small-parts filing and storage in factories, offices and workshops, the See-Thru plastic drawer cabinets are adopted by some American companies. The model illustrated consists of twenty spillproof drawers, each $5\frac{7}{8} \times 2\frac{3}{4} \times 1\frac{7}{16}$ in. in welded all-steel cabinet. The overall size is $10\frac{1}{4} \times 12\frac{1}{2} \times 6$ in. The makers are General Industrial Co., 5738 North Elston Avenue, Chicago, 30, Ill., U.S.A.

PHARMACEUTICAL MACHINERY AND PLANT

MECHANICAL HANDLING in the factory

Machinery designed to solve problems of internal transport

of producing manufactured products in great quantities, with economical use of man-power and time, has in turn created a need for other machines capable of maintaining a concentrated flow of raw materials to, and finished articles from, the production machines. Mass-produced articles and materials have to be stored pending dispatch or use, and in the same way machines for stacking them are required. The transport of goods or materials from one part of a factory to another may be accomplished either by means of vehicles (trucks) or by conveyor systems. As the demands on space within a factory are as a rule heavy, it becomes essential that trucks operating inside should be extremely manœuvrable.

Battery-operated vehicles are available from various makers. Brush Coachwork, Ltd., Loughbo ough, are manufacturers of the Cob tractor and of Brush industrial trucks, three-wheeled vehicles having the single wheel in front. With a maximum steering lock of 90° they enable turning to be done in a confined space (even the industrial trucks, longer in wheelbase than the Cob tractor, can turn in a circle of radius 6 ft. 3 in.). The driving units are selfcontained and consist of totally enclosed motor and reduction gear, the complete units being interchangeable and easily removed. There are five forward and one reverse gears. For each vehicle the battery, located under the driver's seat, is of 161 ampere-hours' capacity. Automatic charging equipment is supplied capable of recharging the battery (using about eightpenny-worth of electricity) in ten hours. With a spare battery kept at hand each vehicle may be used continuously day and night.

The Cob tractor is designed to pull loads contained in unpowered trolleys. For an eight-hour day its no. mal capacity is a load of 1-3 tons, drawn at a speed of 5-7 miles per hour. A rigid towing socket complete with pin is fitted at the rear of the vehicle. The Brush trucks are similar in construction to the Cob tractor except that they are fitted with carrying platforms at the back. Two types are available, each with a load capacity of up to two tons. They are the low loader (platfo.m height, 11 in.) and the high loader (platfo.m height, 19 in.). Each platfo.m is 5 ft. 6 in. long and (according to the user's requirements) 2 ft. 2 in., 3 ft., or 3 ft. 6 in. wide. Models with either a fixed or an elevating platform are supplied. The elevating platform can be raised 5 in. either manually in 30 seconds or electrically in 7 seconds when fully loaded.

The Pyramid lightweight motor truck was introduced in the summer of 1953 by the Excelsion Motor Co., Ltd., Kings Road, Tyseley, Birmingham, 11. It consists of a 69 x 38 in. platform mounted on three wheels. Above the single front wheel is a driving unit consisting of a 1½-horse-power, air-cooled, four-stroke petrol engine and three-speed gearbox. The truck is steered by a handlebar that can swing the entire driving unit through a full circle so that, by making a twist of 180°, the three gears can be used when the truck is moving backwards. The truck can turn in a circle of 6 ft. radius. Its maximum height is 3 ft. 7 in, and recommended maximum load 1 ton.

The Fork-lift Truck

One of the most versatile pieces of mechanical handling equipment is the fork-lift truck. Not only can it transport loads but it can also elevate them. It may therefore be

used for stacking crates, drums, etc., or for loading and unloading. As the machines are designed so that the operator can pick up or put down a load without leaving the driving seat, they enable handling operations to be performed in the shortest possible time. A fork-lift truck consists of a petrol, diesel or electrically powered three- or four-wheeled vehicle having in front a te escopic vertical ramp. Steering is via the back wheel or wheels which lock over so that the vehicle can make a turn in little more than its own length. The ramp takes a carriage fitted with two steel prongs (the fork) projecting forwards, and the fork can be moved from floor level directly upwards bearing its load. As the load ascends, the ramp extends until, with the fork at its full height (in some machines as high as 14 ft.), the ramp is fully extended. The operation is effected by a combined hydraulic and pulley system. Ramps are arranged to tilt a few degrees forwards or backwards. All the movements are powered by the engine of the truck. To make a pick-up, the truck is driven up to the load, the ramp is tilted forward, and the truck advances to slip the fork under the load. The ramp is then tilted back, so that the weight of the load is taken up and the carriage is raised a few inches, causing the load to clear the floor. With the ramp tilted back (for maximum load stability) the truck with its load may be driven to any part of the factory or grounds. The truck can then be unloaded by reversing the procedure, either at ground level or at any other height within the range of the machine.

Details of Performance

A complete range of fork-lift trucks is made by Con-VEYANCER FORK TRUCKS, LTD., Liverpool Road, Warrington. The company's range includes electrically driven models using a 36-volt battery that can be charged in situ, and whose state of charge can be read from a charge indicator at any time. The E2-20 truck lifts a maximum load of 2,000 lb. to a height of 12 ft.; the E2-24, 1 ton to 14 ft.; the E4, 4,000 lb. to 14 ft.; and the E3-20, 3,000 lb. to 9 ft. The 4-24 truck is supplied with either a 16-horse-power petrol or a 25-horse-power diesel engine, and lifts 4,000 lb. to 14 ft. The TC4, TC5 and TC6 vehicles lift to a height of 14 ft. loads of 4,000, 5,000 and 6,000 lb. respectively. Engines are either petrol (30.8 horse power) or diescl (29.5 or 40 horse power). A feature of the series is that the transmission is clutchless and incorporates fluid drive. Conveyancer trucks can be supplied with a free-lift stacking unit (the ramp not elongating until the fork has travelled to the top so that work under low ceilings is possible). Various attachments are available. In one, a large shovel, which can be dipped for emptying, replaces the fork, permitting in that way the handling of free flowing materials. Other attachments that can be fitted in the place of the standard fork are a light crane and a rotating fork, similar to the conventional type but capable of being rotated about a horizontal axis to make tipping operations possible.

The Hyster fork-lift trucks made by the Hyster Co., U.S.A., are marketed in Britain by BOWMAKER (PLANT), LTD., Noose Lane, Willenhall, Staffs. They are powered by 4-cylinder petrol engines and lift to a height of 10 ft. The model 20 handles loads up to 2.000 lb., and the model 40 up to 4,000 lb. Model 20 is available also with a free-lift attachment. A feature of the model 40 is that the tilting of the ramp is done by means of a lever mechanism passing over-

head and that it incorporates a guard to protect the operator against falling articles. Optional attachments include a scoop for handling free-flowing materials and a revolving grab (a pincer-like attachment that picks up drums, bales, etc., and is capable of being rotated about a horizontal axis). The company also manufactures the Hyster Karry Krane for use inside or outside the factory: a light crane mounted on a truck with pneumatic tyres that deals with loads up to a maximum of 10,000 lb.

For manufacturers facing unexpected handling problems (breakdown of existing trucks, unusual orders, etc.) or whose needs are so occasional as not to warrant the expense of a machine of their own, George Cohen, Sons & Co., Ltd., Wood Lane, London, W.12, have a fleet of diesel-powered fork-lift trucks available for hire by the day, week

or longer period.

So that fork-lift trucks may be used, it is necessary that each load should have a space underneath to admit the fork. That is ensured by use of a "pallet." With a pallet under the lowest crate a stack of crates may be built up, stored in position for as long as required, and transported without delay or hindrance, whenever necessary. The simplest form of pallet is simply a stout hollow-framed stillage. One is used for each truck load, but a second load, with its own stillage, may, for storage purposes, be placed upon the first. Box pallets consist usually of a wire-mesh-sided box standing on raised legs designed so that one box can stand on another, the legs allowing for the necessary space between. If the bases of the legs are connected by parallel, grooved rails, and corresponding upper edge of the box is tongued to fit into the grooves of another box, a secure stack is ensured. Another method of ensuring stability is to provide, at each upper corner, cups into which the legs of another box may rest. Such boxes may be used for storing loose articles. Another form of pallet is a "post" pallet consisting of a unit like a box pallet but without sides, so that a series of shelves can be built up with the stores already in place. Such pallets are made by BARRON & SHEP-HERD, LTD., 24 Buckingham Street, London, W.C.2. Stillages are supplied in hardwood or steel, and the box and post pallets are made collapsible for ease in handling when empty. Pallet trolleys are also made. They are four-wheeled frames on which a box pallet can be fitted so that it becomes instantly mobile.

A stacker made by J. Collis & Sons, Ltd., Regent Square, Gray's Inn Road, London, W.C.1, consists of a vertical ramp of ceiling height mounted on a wheeled base. A platform holding a load can be sent up to the top by electrical or manual power (separate forms of the machine are available). The power is transmitted hyd aulically. The rate of lift of the electric model is up to 60 ft. per minute. The machine can be used for stacking cartons quickly or for slowly raising a press tool into position. To negotiate low doorways, etc., telescopic and hinged-head models are

available.

The stacker made by MATLING, LTD., Fallings Park, Wolverhampton, is a power-operated machine designed to do the stacking, loading and unloading operations of a fork-lift truck but not to carry the goods from place to place. It consists of a vertical ramp and a fork similar to that used on a truck. The machine has the advantage over a fork-lift truck that it can be used in confined spaces of warehouses for stacking palletised loads. As it is mounted on wheels, it can be pushed easily into the required position by hand, and can stack goods to a mast height of 9 ft. Models operated by petrol or electric (either battery or mains powered) motor are available.

Miniature Fork-lift Trucks

Manually operated carrying and lifting devices, which may perhaps be regarded as fork-lift trucks in miniature, provide a means of handling smaller loads than are normally dealt with by full-size power-operated trucks. Two machines described below bear a superficial resemblance

to the conventional two-wheeled hand trolley used everywhere for handling crates, etc., but each is equipped with a rest on which the load stands when the machine is in the upright position and which can be raised or lowered with its load to make stacking, loading and unloading operations easy. As the loads rest on forks similar to those fitted to fork-lift trucks, the machines may be used for stacking of palletised loads.

The Translifter made by BARRON & SHEPHERD, LTD., is operated by a winch and steel cable working through a pulley system. The winch is self-sustaining, causing the load to remain at the height at which it is held when the operator relinquishes his grip on the handle. The fork is raised or lowered only by operating the handle, and the operation is one-handed. In use, the machine stands upright on a steel bar that holds a small pilot wheel enabling the unit to be pushed forward so that the raised load can be placed where it is required. A platform can be fitted instead of a fork. The machine lifts loads of up to 5 cwt. to a height of 3 ft. 6 in. (the height can be altered to suit requirements). The manœuvrability of the machine is such that it will operate in gangways the width of a man.

The Sherpa Handraulic truck made by Salisbury Precision Engineering, Ltd., Salisbury, Wilts, lifts its load by means of a combined hydraulic and chain-and-puley system. The operator, by wo king a pump hand, e, can raise a maximum load of $2\frac{1}{2}$ cwt. through a height of 3 ft. The platform is lowered by releasing the pressue by means of a lever, and that may be done slow, when the machine is loaded or quickly when unloaded. An attachment is supplied for converting the fork into a solid platform. When the machine is raising or lowering it is supported upright

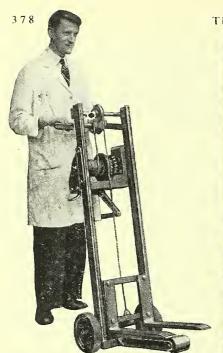
on a fixed frame.

One-man Lorry Loading

With the help of the Mechanical Skid, Fig. 1158, made by the Tyne Truck & Trolley Co., Ltd., First Avenue, Team Valley Estate, Gateshead-on-Tyne, 11, one man, unassisted, can load or unload lorries with drums or barrels each weighing up to 5 cwt. The apparatus itself weighs 120 lb. and can be carried on the vehicle. It consists of a double trackway reaching from the ground to the platform of the lorry, and a cradle that slides up the track supporting the load. The operator rols the barrel or drum on to the cradle, which in its lowest position lies back to take it, and operates a winch that draws cradle and load to the top of the track. The winch has a friction brake, so that the load can be held at any height, even if the operator lets go of the handle of the winch. No ratchet is involved and the lifting time is 15 seconds.

A portable machine for performing many odd handling operations incidental to the running of a factory is the Newton Hydratrack made by POWER JACKS, LTD., Valetta Road, Acton, London, W.3. It consists of a wheeled trolley to which is connected by levers a 30 x 30 in. platform that can be raised from floor level to a height of 5 ft, by hydraulic power. Two kinds are available, a manually operated model worked by a pump handle, and a power-operated model. The former can lift a maximum load of 10 cwt, in one minute, and the latter, which is wo.ked by a 250-horsepower electric motor, in 25 seconds. The machine is useful for loading and unloading heavy packed goods, including drums, or for stacking. The platfo.m tilts backwards 3 degrees to steady the load during the lift or forward 6 degrees to facilitate unloading. Drums can thus be easily rolled on or off. A separate attachment which can be supplied keeps the platform at a constant height during such operations as the feeding of sheet material into a machine.

A simple device for moving heavy loads manually but easily—the Weel-easi bogie truck made by Boabands, Ltd., 42 Wolfington Road, London, S.E.27—is simply a steel frame about 2 x 2 ft. mounted on four wheels, each mounted with double ball bearings. The "truck" stands about 2 in. high and in use is slipped under the load, acting



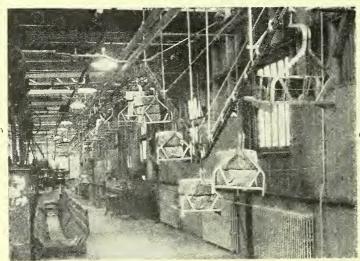


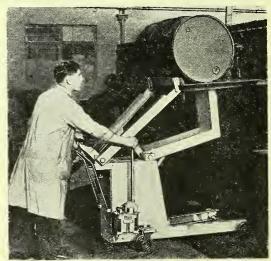
MACHINERY

At left: Two machines for handling goods in narrow corridors: The Translifter (Barron & Shepherd, Ltd.); and the stacker for palletised loads (Matling, Ltd.). The picture also shows the method of storing goods with box and post pallets.

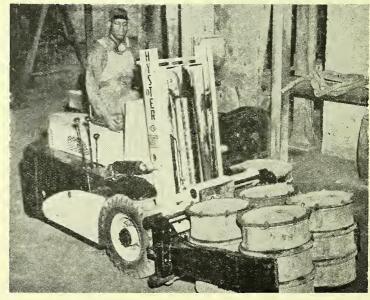
Centre row: An installation of a 705 cable conveyor system showing its flexibility (Teleflex Products, Ltd.); and a manually-operated Newton Hydratruck (Power Jacks, Ltd.) lifting a 50-gall, drum.

Foot of page: E4-20 electrically-operated fork-lift truck (Conveyancer Fork Trucks, Ltd.) stacking palletised goods; and Hyster 40 truck fitted with barrelgrab attachment handling four drums in one operation (distributors: Bownaker (Plant), Ltd.),

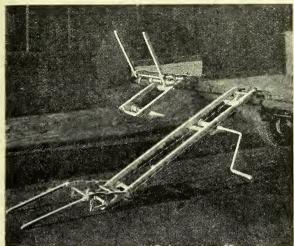


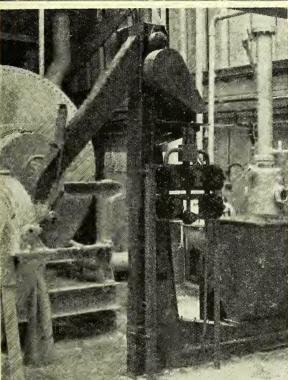


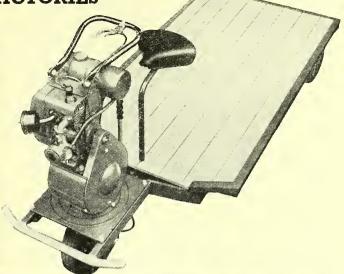




FOR HANDLING GOODS IN FACTORIES









Top left: Manually-operated mechanical skid for loading and unloading lorries (Tyne Truck & Trolley Co., Ltd.), inset shows carriage in highest position.

Top right: The Pyramid lightweight motor truck (Excelsior Motor Co., Ltd.) with petrol engine and steering unit capable of complete revolution.

Above: High loader electrically-operated truck (Brush Coachwork, Ltd.) with elevating platform, loaded and towing a loaded trolley.

At left: An installation of a powder and granule conveyor (Conveyors (Ready Built), Ltd.) for horizontal and vertical movement adapted as a filler for a powder mixer.

Below: An installation of a Flowline belt conveyor (Fisher & Ludlow, Ltd.) in a tableting department illustrating how conveyors speed packaging operations.



as temporary castors. It can be turned in its own width. Where the movement of a constant stream of artic'es or quantities of mate ial at regular intervals is required in a factory a conveyor system is a necessity. Conveyors are useful for taking raw materials to that part of the factory where they are processed, for moving finished products to the delivery bay, or as an adjunct to the packaging department, so that the various stages may be carried out on one conveyor but in different parts of a room in one continuous operation. For the latter purpose a belt conveyor is generally used, consisting of a continuous canvas or leather belt running over two rollers some distance from each other. Long conveyors are built up out of separate units one taking over from the previous one in the line. The illustration on p. 379 shows a Flowline belt conveyor made by FISHER & LUDLOW, LTD., Bordesley Works, Birmingham, 12, in use by a tablet maker.

Belt Conveyors

Belt conveyors are also made by GEORGE COHEN, SONS & Co., LTD. They are available as unit sections 8 ft. long, the belt being carried on spaced ball-bearing rollers. Belt widths range f.om 12 to 30 in., and speeds from 35 to 60 ft, per minute. Both end- and intermediate-drive units are available. An assembly of such units is readily dismantled and set up again in a modified arrangement to meet different production requirements, Messrs. Cohen also manufacture gravi y toller conveyors.

When a conveyor is made up of sections each of which is driven by a separate motor, there is the possibility that one section may stop or slow down so that it cannot handle the material with which it is fed and a "pile up" results. To meet this problem the GENERAL ELECTRIC Co., LTD., Magnet House, Kingsway, London, W.C.2, has designed separate bleak-circuit and make-circuit switches that are coupled to the driving shaft of a conveyor. A switch operates if the conveyor section to which it is attached slows down or stops. Thus a break-circuit switch can, if one section stops, switch off the preceding section. In fact, a chain reaction can be provided for under which sections back to the beginning can be switched off. A make-ci-cuit switch may be fitted to the first section of conveyor and connected to an alarm circuit so that an audible or visible warning is given.

A range of conveyors is made by J. Collis & Sons, Ltd. In addition to a belt conveyor (the Motaveyor) available in unit or sectional forms the company make the Rolaveyor which is built up of a number of metal rollers arranged one after the other in the form of a slightly sloping track. Boxes travel along the track under gravity. Where the track turns a corner the rollers are made conical in shape so that the boxes follow the course. The Vertiveyor is designed to pick up articles from a Rolaveyor on one floor and lift or lower them on to another on a different floor. It consists of a continuous chain of moving slings and a trip mechanism for holding up an article on the roller conveyor until a sling is ready to receive it. Another conveyor made by the company is the Slatveyor, for moving objects uphill. It consists of a moving band of slats some of which are raised above the level of the others to provide regularly-spaced stops against which articles rest to p event them from sliding backwards. Also made by the company is the Loadaveyor. consisting of an inclined belt conveyor mounted on a portable trolley for moving packages from one level to another wherever a permanent instals lation is not required. The belt is fitted with slats at intervals to prevent loads sliding down.

Conveyors and elevators suitable for transporting powders, crystals, granules in a continuous stream instead of in batch loads are manufactured by CONVEYORS (READY BUILT), LTD., Caincross Works, Stroud, Glos. They consist in principle of a tube of square section (it may be made from wood, wood with metal lining, or steel) within which moves a continuous chain. Fixed to the chain at intervals

are metal flanges, which push the material along the tube. The system can be installed horizontally, vertically, or as a horizontal conveyor running into a vertical elevator so that the material changes its direction without reloading. The part of the chain that moves in the opposite direction from the material does so in a separate smaller compartment in which the flanges lie flat. The machine can be fitted with multiple inlets and outlets. S.mlar conveyors but of steel in circular sections may also be obtained from the company. A modification of the steel-tube conveyor is the portable tubular elevator, a short elevator working on the principles previous'y described but mounted on a wheeled carriage at an angle of about 45 degrees to the horizontal. The machine can be used for temporary wo.k and taken where it is needed; it is driven by a 1½-horse-power petrol engine mounted on the carriage. If required, the elevator is supplied without engine. Delive, y of material is via a twoway spout, enabling two bins to be filled together.

Two types of overhead conveyors are made by TELEFLEX PRODUCTS, LTD., Teleflex Works, Chadwell Heath, Essex. They are the 705 cable conveyor system and the dual-directional chain conveyor system. Each conveyor is intended to carry its loads suspended from a moving track, which can bend in a horizontal or vertical plane making movement in any direction except the vertical possible so that materials may be transported round corners or carried high up under a ceiling, away from operations below, to be brought down again where needed.

The cable conveyor consists of a continuous steel cable running inside a housing in the form of a continuous pipe having a groove in the base through which hange s are fixed to the cable. The cable is a tensile steel wire core wound round with other layers of wire to form a continuous helical thread. That arrangement makes for strength and flexibility and the thread allows the cable to engage with a toothed driving wheel housed in a corner of the factory. Hangers designed to meet the user's requirements are provided by the makers. They may be trays, bins, or special attachments for holding drums, etc. The hangers, spaced as required, run on flanged wheels on a track below the cable.

The chain conveyor system, which takes heavier loads than the cable conveyor, uses a specially designed chain made up, rather like a bicycle chain, of jointed metal strips. To enable the chain to bend in any direction it has universal joints (each has two pivots at right angles to one another). A joint is connected to the preceding one by one pivot and to the next by the other pivot so that alternate connecting strips are in planes at right angles to each other. The axle of each pivot has a wheel at either end, giving each joint four wheels. The whole chain runs on its wheels inside a channel that can twist in any direction. Hangers are attached to the connecting strips. With the chain conveyor, goods can if desired be carried above the runway instead of being suspended from the chain, or the conveyor may be fitted with slats above to make a slat conveyor.

ECHOES OF THE PAST

CAMPHORATED EYE WATER

From The Morning Chronicle, March 5, 1795.

This Water is of the utmost service in all Defluxions of Rheum, and sudden Blights and Inflammations of the Eyes and Eye-lids. It is a very mild preparation, and perfectly safe for children; and is an excel ent remedy for those Weaknesses of the Eyes which remain after the Small Pox and Measles, and indeed whereever a topical application can be of use this will be found so

application can be of use, this will be found so.

Sold by the proprietor, H. Steers, at his Medicine Warehouse, Old Bond-street, on the left hand from Piccadilly, five doors beyond Stafford-street, price 1s. 1½d. the bottle, duty included; but on taking six or more, the stamps will be allowed; also by his appointment, at F. Newbe y's, corner of St. Paul's; Jeboult and Co's, No. 150, Oxford-street; R. Tutt, under the Royal Exchange and Wm. Clarke's, 269, Borough High-street.

A MODERN COURSE OF **PHOTOGRAPHIC** STUDIES-3

By H. Baines, D.Sc., F.R.I.C., F.I.B.P., Hon. F.R.P.S.

LIGHTS AND LENSES

Nature of Light

FECULATIONS as to the nature of light have been made since the beginnings of recorded history, and doubtless were made long before then, but only since the beginnings of experimental science in the seventeenth century have such speculations been "informed." Newton concluded that light consisted of minute partic'es of matter emitted at high speed from a light source, and that the impact of these corpuscles on the eye gives rise to the sensation of sight. Huygens on the other hand concluded that light is a form of wave motion in a hypothetical med'um, which pervades all space—empty or full—and which is termed the "ether." It is now believed that both theories are correct—there is a border region where waves and particles are indistinguishable, but most normal optical phenomena are explained on Huygen's wave theory.

It is recognised that energy may be transmitted through space by a form of wave motion of electromagnetic origin. The energy manifests itself in different ways according to the wave-length (distance between corresponding parts of adjacent waves), although the velocity through empty space is the same for all wavelengths-186,000 miles per second.

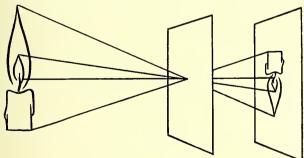


Fig. 11. Pinhole camera.

Wavelengths may vary from a millionth of a millionth of a centimetre to some five hundred miles, and manifest themselves as cosmic rays, gamma rays, x-rays, ultra-violet, visible, infra-red, heat rays and wireless waves.

From this huge spectrum, visible light covers only the range from 3,000 to 7,000 angstrom units (one angstrom unit being one ten-millionth of a millimetre). The eye distinguishes between radiations of different wavelengths within this range, since it perceives them as difference in co'our, from red at 7,000 A., through orange, yellow, green, blue and violet at 3,000 A. This range of colours—called the "visible spectrum"—occurs in nature as the rainbow.

Behaviour of Light

(a) RECTILINEAR PROPAGATION. Light travels from a luminous source in all directions in straight lines. For this reason a pin-hole camera will give an inverted image of a luminous or illuminated object (Fig. 11).

(b) REFLECTION. Light falling on a plane po'ished surface is reflected so that the angle of incidence (the angle between the incident ray and the "normal" or perpendicular) is the same as the angle of reflection. The reflected ray is in the same plane as the incident ray and the normal

(Fig. 12). This type of reflection is termed specular reflection. A matt or rough surface, such as paper, because of surface irregularities gives rise to "diffuse" or "scattered" reflection. Many surfaces, such as varnished wood, may show both types.

(c) REFRACTION: CRITICAL ANGLE. It is sufficient to note that when light passes from one transparent medium to another (e.g., air to glass, water to air, etc.) it is bent towards the normal on passing from the rarer to the denser medium, and vice versa. Different media cause different amounts refractive index " of the medium.

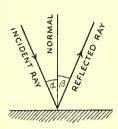


Fig. 12. Specular reflection. Angle of incidence (∝)=angle of reflec-

of deviation depending on the optical property called the

When light passes from a denser to a rarer medium it is refracted away from the normal. As the incident angle increases, therefore, it will reach a value when the emergent ray skims along the boundary plane between the two media. This incident angle is termed the "c.itical" angle, and light striking the boundary at a greater angle than that suffers total reflection. As the critical angle for a glass-toair surface is around 40° (depending on the glass), light striking the boundary at 45° is totally reflected, and this

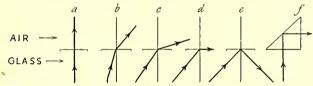


Fig. 13. Refraction. (d) Represents critical angle, (e) total reflection, and (f) a reflecting glass prism.

property is utilised in the "reflecting prism," such as one finds in binoculars and in document-copying cameras (Fig.

If light passes normally through a block of glass with parallel plane sides, it is undeviated, but if it passes at an angle, the emergent ray will be parallel to the incident ray,

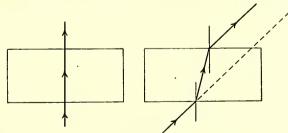


Fig. 14. Refraction by glass block with parallel sides.

but displaced (Fig. 14). This effect is utilised in some highspeed cameras, in which a rotating block of glass causes the image to move in line with continuously moving film.

A block of glass with non-parallel plane sides, e.g., a prism, will cause a change in direction of the light, towards the base of the prism (Fig. 15). The amount of refraction, or change in direction will depend on the angle of the prism, the angle of incidence of the light, the "refractive index" of the glass and finally the wavelength of the light entering the glass.

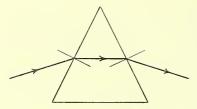


Fig. 15. Refraction by glass prism.

(d) DISPERSION.
Since different wavelengths are refracted to different extents, white light, which is a mixture of all wavelengths in the visible spectrum, is analysed into its component wavelengths by passing

through a glass prism. The resultant beam, projected on to a white surface, appears as a "spectrum," the longer wavelengths (red), being refracted to a less extent than the shorter ones (violet).

The Lens

The sharpness of the image formed by a pinhole camera depends on the size of the pinhole, since every point on the object is represented by a small patch of light on the image, larger than the pinhole. A small hole gives a sharp but faint image; enlarging the hole brightens the image at the expense of sharpness. A lens is a device whereby a large cone of light from a point may traverse a large disc and be refracted so that it is once more concentrated to a point image. The rays passing through the centre of the lens must not be refracted, and hence the tangential planes at the centre of the lens must be parallel; the rays passing through the other parts of the lens must be refracted as through prisms of increasing angle as one travels towards the edge of the lens. The typical lens-shape is given by the continuous merging of an infinite number of such prisms. Simple lenses are of various types. Those thicker in the centre than the edges are convex lenses and cause parallel light to converge to a "real" image; a common example of this type is the meniscus lens. Those thinner in the centre than the edges cause parallel light to diverge from an unreal or "virtual" image, and are called concave lenses. While simple inexpensive cameras use a meniscus lens, more expensive cameras, enlargers and projectors use, for reasons mentioned later, a combination of several lenses of different shapes and types of glass. The total combination in every case acts as a converging lens.

Focus

The point at which light from a point on the object is converged by a lens is called the focus. The position of the focus varies with that of the object, and when parallel light (light from a distant point source, e.g., a star) falls on a lens, the focal point is called the "principal focus," and

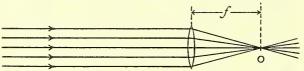


Fig. 16. Refraction by lens of parallel light. O is principal focus; f is focal length.

its distance from the lens the "focal length," f. (Fig. 16). It is comparatively easy to measure the focal length of a fairly thin lens. When we are dealing with a compound lens of considerable overall thickness, we have to determine the position of a plane inside the lens (called the "node") from which the distance to the focus of parallel light should be measured.

Brightness of Image—f numbers

The brightness of a camera image obviously depends on two factors—the amount of light let into the camera, and the area over which that light has to be spread. The amount of light transmitted by a lens (assuming that it is perfectly transparent) is proportional to its area, which is proportional to the *square* of its diameter. From Fig. 17, it is clear that the *height* of an image is proportional to the focal length of the lens, so that the *area* of the image

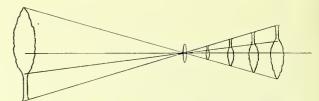


Fig. 17. Images formed by lenses of different focal lengths.

(i.e., the area over which the light transmitted by the lens has to be spread) is proportional to the square of the focal length. Thus the wider the lens aperture, the brighter the image, but the longer the focal length, the dimmer the image. The brightness of an image is thus proportional to: (light transmitted by lens) or (diameter of lens)² or

(area of image) (focal length)² $\left(\frac{\text{diameter of lens}}{\text{focal length}}\right)^{2}$

Now the brightness of an image in the camera is one of the factors which is adjusted to give a required exposure. and it is controlled by varying the effective diameter of the lens, usually by an iris diaphragm. The brightness is marked on the diaphragm adjusted in terms of the fraction

focal length lens diameter

and therefore represents a brightness value which is independent of the actual focal length of a camera. By inverting the fraction in this way, the numbers are whole, rather than fractions, but because of the inversion, they *increase* as the brightness decreases. Thus f/8 represents a stop whose diameter is one-eighth of the focal length; f/4, one-quarter, and so on. Since the ratio between 8 and 4 is 2:1, the brightness increases by a factor of 2², or 4. Diaphragms are usually marked in steps representing a brightness increase of two times for each step. Hence the f numbers must decrease by a factor of 2 for each stop; for example, f/64, f/44, f/32, f/22, f/16, f/11, f/8, f/5·6, etc.

Since the exposure given to a material has two factors—intensity of light and time of exposure one may give the same exposure even though one increases the brightness (i.e., opens up the iris diaphragm), provided that one proportionally decreases the *time* of exposure. That is to say, to keep the exposure constant, one must double the exposure when changing from any stop to its next higher number.

The Coating of Lenses

Unfortunately the f number is not always a good measure of the brightness of an image. We have seen that it is calculated from the physical dimensions of the lens and diaphragm, and even assuming accurate dimensions, it is a good measure only for a perfectly transparent lens, and for a distant object. But lenses are not completely transparent. About 5 per cent. of the incident light is lost by reflection at each air-glass surface, so that, while a simple lens fitted to an inexpensive box camera loses about 9 per cent, of light, a complex lens capable of an aperture of f/1.3 may have eight air-glass surfaces, giving a total loss of 45 per cent., thus transmitting little more than half of the incident light. Thus a high quality lens, stopped down to f/11 is much less efficient in regard to brightness of image than a simple inexpensive lens from a box camera. However, of recent years a method of reducing surface reflection of glass has been devised whereby the surface of the glass is given a very thin coating of a material intermediate in refractive index between glass and air. This causes a reduction in surface reflection from 5 per cent, to about 1.5 per cent, at each surface, so that the light loss from a most complicated lens system will not exceed about 15 per cent.

Objects are not always distant, and as the object approaches the lens, so the image recedes, and the further it recedes, the larger it becomes. This means that the light passed by the lens has to cover a larger area, and the image

is therefore dimmer than that of a more distant object. The effective aperture of the lens is therefore less for near objects, but fortunately, the effect does not become really significant until the object is very close to the lens, and the effect can normally be neglected for objects more than 6 ft. from the camera.

The relation between foeal length (f), distance of object (u), and distance of image (v), is governed by the fundamental equation:—

 $\frac{1=1+1}{f}$

If we are photographing an object at unit magnification, object and image, being the same size, will be equidistant from the lens, hence u=v. By substituting in the equation, we find 1=2 or u=v=2f; that is to say that, for unit

magnification, both object and image are situated at a distance of twice the focal length from the lens.

Perspective

If we neglect errors due to lens aberrations, the view recorded by a camera is identical with that which the eye would see from the viewpoint of the camera lens. The perspective, therefore, must be correct, provided that one views the prints correctly. Most of the apparent distortion produced by wide angle or telephoto lenses is due to viewing the prints from an incorrect distance. It is clear from Fig. 17, that irrespective of focal length, a contact print will represent the view exactly as the eye saw it, provided that it is held at the same distance from the eye as the image was from the lens. For most subjects, this distance is practically equal to the focal length of the lens. If a print is enlarged "x" diameters, then the viewing distance of the print, in order to subtend the same angle to the eye, and thus to maintain correct perspective, must be "x" times the focal length.

Now the normal distance of viewing a print in the hand is about 10 in., so that a camera of about 10 in. focal length is the only one that will give a contact print having eorrect perspective. As nearly all amateur cameras have much shorter focal lengths than 10 in. practically all contact prints give perspective distortion.

Fortunately, such distortion is not apparent unless the view includes a near object, and even then the latter must be such that distortion in size is obvious. Thus a part of the body will show up distortion if it is out of proportion with the rest of the figure, but a bush or a gate would not make distortion obvious since it may have any dimension, relative to other objects. As a print is viewed in the hand at a distance of about 10 in., correct perspective is obtained if the print is enlarged by a factor of 10 divided by the focal length in inches (or 250 divided by the focal length in millimetres). Thus a print from a miniature camera of focal length 2 in. shou'd be enlarged five times.

But most cameras have about the same angle of view, which is approximately that subtended by a whole plate viewed at 10 in. from the eye, so that one can formulate the rule that a whole plate print from the whole of the negative gives about the right perspective for hand viewing. Negatives taken in wide angle or telephoto cameras are, of eourse, exceptions.

Circle of Confusion—Depth of Focus

A perfect lens in perfect focus wou'd render a point on the object as a point on the image. But since perfection is unattainable, a point is rendered as a small circular area of light—called the circle of confusion. The size of the circle depends on the quality of the lens and the accuracy of focusing, and obviously the smaller the circle of confusion the better the definition in the image. However, at the normal viewing distance of 10 in., a circle of about 1/100 in. in diameter, appears to be a perfectly sharp point so that an image appears to be in sharpest focus if a point is rendered as an area not greater than this dimension. With

a given lens, there will thus be a certain latitude in focusing within which the circle of confusion is less than this minimum, and the distance between the front and rear limits is termed the "depth of focus." Depth of focus should not be confused with "depth of field" which is discussed later. Depth of focus is concerned solely with the permissible

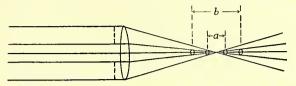


Fig. 18. Depth of focus (a) at full aperture; (b) with lens stopped down.

movement of the sensitive material in the camera, relative to a fixed focal plane of the image. It therefore concerns a photographer only in regard to accuracy of focusing with, for example, range-finder or ground glass screen. Since most photographers do not possess cameras fitted with these devices, they have no practical interest in depth of focus, and have to rely on the camera manufacturers for ensuring that the sensitive material is positioned within the tolerable depth of focus. From Fig. 18, it is clear that depth of focus is increased by decreasing the aperture. Lenses of different focal lengths have the same depth of focus at the same f number, since the angle of the cone of light is the same.

Depth of Field

It has been seen that there is a certain amount of latitude in the position of the sensitive material relative to the plane of the optical image in the camera (depth of focus). There is similarly a degree of latitude in the position of an object while still retaining sharp focus on sensitive material in a fixed position in the camera. This latitude is known as depth of field and is of much greater practical importance to photographers. If an object is accurately focused in the camera there will be positions in front of, and behind, the object, that will still be in acceptable foeus. The limits will be those positions at which a point on the object is rendered as a circle of about 1/100 in. diameter. The distance between these subsidiary limits is called the depth of field. Depth of field increases as one stops down the lens; it also increases with decreasing focal length of lens, and with increasing distance of object from the lens.

Hyperfocal Distance

A special ease of depth of focus is that of parallel light. While this gives an image at the principal focus of the lens, there is a certain distance from the lens where a point source produces at the principal focus a circle of 1/100 in, diameter. That distance is termed the hyperfocal distance, and every object beyond it is in sharp focus at the principal foeal plane. From the arguments advanced in considering depth of field, it will be seen that hyperfocal distance decreases when a lcns is stopped down, and is shorter with shorter focus lenses. If a lens is focused on the hyperfocal point, then any object from infinity to a distance of half the hyperfocal distance is in sharp focus, and that principle is utilised in inexpensive cameras with fixed foeus. As the aperture of such cameras is small, a remarkable range of acceptable focus is attained, every object from infinity to about 10 ft, from the camera being in sharp foeus.

Lens Aberrations

A simple lens with spherical surfaces suffers from a number of defects called aberrations, of which the main ones only will be mentioned. In general the effect of lens aberrations increases with increasing aperture, and hence the simple meniscus lens fitted to an inexpensive camera gives satisfactory results because it is used at low aperture.

Most aberrations are corrected, or partly corrected, by a suitable combination of positive and negative (concave) lenses of different types of glass and of carefully computed radii of curvature.

Chromatic Aberration

Since different wavelengths are refracted to different extents, the shorter wavelengths (violet) will be brought to a focus nearer to the lens than longer (red) wavelengths. The defect can be corrected by combining a positive lens with a negative one of different glass. A colour corrected lens is called an achromat. In what is known as transverse colour aberration a light point, off axis, is stretched out into a little spectrum. It is important that the lens should be corrected for this defect for colour photographs.

Spherical Aberration

A simple lens with spherical surfaces brings marginal rays to a focus nearer to the lens than the focus of rays which pass through the centre of the lens. Like chromatic aberration, spherical aberration gives rise to lack of definition in the image. The defect is corrected by combining positive and negative lenses in a fashion rather similar to that used in constructing achromats.

Curvilinear Distortion

Rays reaching the edge of an image, i.e., traversing the lens at a considerable angle to the axis will use different parts of the lens, according to the position of the aperture. If this is in front of a simple lens, barrel distortion results, whereby a square is imaged with bowed-out sides; if the aperture is behind the lens, an opposite effect, pin-cushion distortion, is obtained. One way of curing this defect is to place the aperture midway between two identical lenses. This method was used in "rapid rectilinear" lenses, and is still in use in some modern lenses. Fundamentally the correction of distortion involves the use of separated e'ements, though it is not necessary that the system should be symmetrical. Other aberrations that can be wholly or partly corrected are known as "coma," which gives a sort of "skewed" spherical aberration, curvature of field, and astigmatism. The cure for astigmatism is again separated elements. A lcns with the last-named aberration corrected and a flat field is called an anastigmat.

A fiction writer discusses

ADVERTISED MEDICINES

The Silent Shore

DENIS B. WYLIE, Hodder & Stoughton, Warwick Square, London, E.C.4. $7\frac{1}{4}$ x $4\frac{1}{2}$ in. Pp. 384. 12s. 6d.

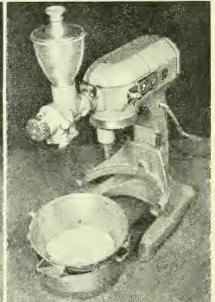
A REVIEW of this well-written, most readable novel must be sought elsewhere. Here we are concerned with opinions on the advertising of proprietary medicines as given by two important characters. In setting them forth the author has clearly drawn upon his "experience in Press advertising and journalism." Hence, perhaps, a bias in their favour natural enough in Roger Masters, "the man who made a mint of money out of sore fingers" ("Masters Products was one of the biggest patent medicine conce ns in the country"), but less to be expected, perhaps, in Dr. Elizabeth Cluny. The doctor, it is true, is drawn as a woman accustomed to form her own judgments. But as she is portrayed also as more than commonly shrewd, her remark "Naturally we doctors don't encourage people to go in for self-doctoring, any more than a working decorator encourages them to paper their own walls. But even the most widely advertised nostrums wouldn't sell continuously if they didn't do something at least of what they claim, seems a trifle ready-made. The doctor is personally a firm believer in "natural remedies [whatever they are], instead of the medicine bottle or the pill, patent or otherwise." All the same, "I'm getting rather tired of these constant denunciations of commercial medicines. The outcry has grown up chiefly because big money is being made by people with the wits to brand and market a simple remedy in palatable form, and with the honesty to keep up a good standard of purity in the ingredients. Your 'Master Health Salts'—largely magnesium sulphate, I suppose—and your 'Master Headache Tab'ets,' for instance can't be criticised on any grounds of failure to do the job you claim." As a serious argument on a matter of public interest, that seems to us to fail doubly short. It contains too many flaws to be treated as sound reasoning; and it is less than true to the character whose dry wit and humane judgments make her in other respects as much beloved of the reader as they manifestly were with her literary creator.

NUTRIENT SOLUTION.—The solution for parenteral feeding described in the article "Some Unusual Int avenous Solutions" by Miss E. Jean Anderson, B.Sc., M.P.S. (C. & D., February 13, p. 175) contains 16.7 gm. of amino acids in 1,000 mils of the mixture. [Corrected note.]

BENCH-TOP GRANULATION with a Hobart mixer







1. Mixing the ingredients. 2. Foreing the moistened mass through a coarse sieve by means of wooden rollers. 3. Using the "coffee mill" for grinding the dried granules to a suitable size.

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, APRIL 7: An increase of £5 per flask in the price of MERCURY during the week brought in its train higher quotations for mercurials, most of which are now about 1s. 6d. per 1b. above previous levels. There were no other important price movements in Pharmaceutical Chemicals.

The main feature of the CRUDE DRUGS market was the continued shortage of IPECACUANHA. The spot market is virtually bare and there were no direct shipment offers. Portuguese Ergot was easier by sixpence per lb. for shipment. All British-cut QUILLAIA BARK has been sold on the spot and there were no shipment offers. QUASSIA is similarly difficult in view of the new method of costing freight charges men-tioned last week. Spot supplies of both the soluble and insoluble varieties of COPAIBA BALSAM have been cleared. GINGER was unchanged at the higher levels attained in the previous week. GUM ACACIA moved up once again on the spot in sympathy with higher shipment offers. CARNAUBA WAX was easier while BEESWAX remained steady. PEPPER recovered during the week through Continental buying. In Aro-MATIC SEEDS, CORIANDER was firmer in Morocco at 49s., c.i.f., for the present crop; new-crop is not yet offered. Dutch CARAWAY was slightly easier.

There were few important changes to record in Essential Oils. Production PETITGRAIN Paraguay of in appears to be sold ahead for several months. The steady rise in price of CHENOPOD:UM noted in the United States reports during the past few weeks is now affecting spot material and holders are asking fully 5s. a lb.

UNITED STATES DRUG AND CHEMICAL REPORT

NEW YORK, APRIL 6: Controls on export shipments of various chemicals and medicinal preparations were eased by the U.S. Bureau of Foreign Commerce. Whereas these items could not previously be sent out of the country without Bureau approval, shipments may now be made to western hemi-sphere destinations under general licence and without asking permission. Shipments to all other destinations must still be under individual licences approved by the Bureau. Included among the items affected are COAL-TAR products, Antimalarial preparations in dosage forms, SULPHATHIAZOLE, SUL-PHADIAZINE, PENICILLIN, STREPTOMYCIN, GLYCERIN, SULPHURIC ACID, CAMPHOR, METAL SALTS of organic compounds and Ammonium nitrate. Brazilian MENTHOL at \$5:10 per lb. was dearer by 10 cents. Monobasic sodium glu-TAMATE was cut to \$1.55 per lb. (down i5 cents).

Higher per lb, among CRUDE DRUGS was Gum ACACIA with amber sorts at Total Country and Table 1715 cents, up one cent. Lower were Ceylon Papain at \$2.60 (down 25 cents); and East African Papain at

\$2.85 (down 15 cents); BLOOD ROOT at 55 cents (down five cents); and powdered ELM BARK 55 cents (down five cents).

Lower per lb. among Essential Oils are Floridian Orange at 65 cents (down five cents); and LEMONGRASS, \$1.45 (15 cents). Chenopodium was again dearer at \$6.75 (up 25 cents).

Pharmaceutical Chemicals

ACETANILIDE. — 1-cwt. lots are now 2s. 9½d. per lb. for crystals and 5-cwt., 2s. 8½d. Powder is 1d. per lb. more.

ACETIC ACID.—B.P. Glacial is £102 for 1-ton and 115s, for 1-cwt, lots.

AMIDOPYRIN.—In 1-cwt, lots the price is 24s. 6d. per lb.

Ammonium chloride, B.P. — Makers quote 1-cwt. lots at 61s. 6d.

Benzoic acid.—1-cwt. lots are 3s. $0\frac{1}{2}d$. per lb. The SODIUM SALT is 2s. $10\frac{1}{2}$ d. per lb. in 1-cwt. lots.

BENZYL BENZOATE. - Makers' offers of B.P. grade range from 4s. per lb, for 1-ton lots to 6s. 9d. for smallest quantities.

Boric Acid.—Prices for B.P. glade in quantities of 1-ton and upwards are as follows:—Granular, £80; crystal, £87; powder £84 10s.; extra-fine powder £86 10s, per ton, in 1-cwt, bags carriage paid in Great Britain. Surcharges for smaller quantities: Less than 1 ton but not less than 5-cwt., 1s. per cwt., 3-cwt., 2s.: 1-cwt., 3s. 2s.; 1-cwt., 3s.

BRUCINE.—ALKALOID is from 1s. 8d. to 1s. $9\frac{1}{2}$ d. per oz. and NITRATE and SUL-PHATE from 1s. 7d. to 1s. $8\frac{1}{2}$ d. per oz., as to quantity.

BUTOBARBITONE.—B.P.C. is 75s. per 1b.

CALAMINE.—1-cwt. lots are 1s. 7d. per lb.; 10-cwt., 1s. $5\frac{1}{2}$ d.

CALCIUM CARBONATE. - B.P. Powder is £24 10s, per ton, ex store.

CALCIUM CHLORIDE. - B.P. crystals are 1s. $0\frac{1}{2}d$. per lb. in 1-cwt. lots and exsiccated $9\frac{1}{2}d$.

CALCIUM GLUCONATE, - Quantities of 3-cwt, and upwards are quoted at 4s. per lb.; 1-cwt, to 2-cwt, 4s. 1d.; smaller quantities, up to 4s. 4d. per lb.

CHLORAL HYDRATE. → In 1-cwt. lots the price is from 3s, 10d, per lb, as to holder.

CHLORBUTOL.-28-lb. lots are at the rate of 10s, per 1b.

DIPHENAN.—Prices range from 58s, to 67s. per lb., according to quantity.

EMETINE.—Prices for 32-oz, or 1-kilo lots are as follows: HYDROCHLORIDE, 230s. per oz. or 8,113s. per kilo. The BISMUTH IODIDE is 115s. per oz. or 4,056s. 6d. per

EPHEDRINE. — In 100-oz. lots alkaloid is about 8s. per oz. (262s. per kilo); HYDROCHLORIDE, 4s. 7d. (161s. 8d. per kilo); SULPHATE, 5s. 6d. (194s. per kilo).

ETHER.—Prices (per lb.) in Winchesters are now as follows:—TECHNICAL, B.S.S., and SOLVENT, 5-cwt., 2s. 3d.; 10-cwt., 2s. 2d. ANÆSTHETIC, B.P., 5-cwt., 3s. 8d.; 10-cwt., 3s. 7d. In drums prices are 2d. per lb, less than above.

GALLIC ACID.—B.P.C. is 8s, 1d. per 1b. for 1-cwt. lots.

Guaiacols. — Liquid, B P., is 16s. 3d. per lb. for 28-lb. lots; crystals, 16s. 9d.; carbonate, 18s. 3d.

GLYCEROPHOSPHATES,—Rates per lb. for 1-cwt. lots are as follows:—ACID B.P.C., 20 per cent., 5s. 9d.; CALCIUM, soluble, B.P.C., 11s. 9d.; IRON, B.P.C., scale, 15s. 9d. and powder, 14s. 9d.; MAGNESIUM, soluble B.P.C., 14s. 3d., and insoluble, 7s. 6d.; MANGANESE, B.P.C., 26s. 3d.; POTASS UM 50 per cent., B.P.C., 3s. 9d. and 75 per cent., B.P.C., 3s. 1d. and 75 per cent., B.P.C., 3s. 1d. and 75 per cent., B.P.C., 4s. 6d.

HOMATROPINE.—Current rates per oz) for 16-oz. lots are: Alkaloid, 49s.; HYDROB OMIDE, 29s. 9d.; HYDROCHLORIDE, 42s.; METHYLBROM DE, 40°, 6J.; SULPHATE, 41s. 6d. 1-oz. rates are 6d. per oz. higher in all cases.

LACTATES. — CALCIUM, B.P., is 2s. 7d. per lb. in 5-cwt, lots and 2s. 8d, per lb. for 1-cwt, CALC UM SODIUM, B.P.C., for the same quantities is 4s. 4d, and 4s. 5d. per lb. LACTIC ACID, B.P., in 12 winchester lots is 4s., and 3 winchesters, 4s. 4d. per lb. Carboys are 3s. 9d. per lb.

Magnesium oxide B.P. — Bulk rates are as follows:—LIGHT, 3s. 3d. per lb., and HEAVY, 5s. 4d. per lb. for minimum

MERCURY DERIVATIVES.—Dearer, Quotations (per lb.) for 1-cwt, lots are now as follows: AMMONIATED, B.P., lump or powder, 23s. 3d.; PERCHLORIDE, B.P., powder, 21s. (lump 21s. 3d.); SUBCHLORIDE, B.P. (calomel), 23s. 9d.; OXIDES, B.P.C., levigated, or yellow, B.P., 24s. 9d.

levigated, or yellow, B.P., 24s. 9d.

PARAFFINS. — Prices to wholesaler distributors are as fo lows: —Liquid: Heavy, B.P., £98 17s. 6d. per ton; LIGHT, B.P., £81; light Technical white, £68 10s., a'l in 40-45 gall, returnable loaned drums, delivered U.K. Soft: White, medium consistency, £92 15s. per ton; White, soft consistency, £90 10s., and Yellow £70 10s., a l. B.P., in non-returnable drums delivered. Had: Melting point 135/140° F. is £86 17s. 6d. and 145/150° F., £93 5s. per ton, in minimum 1-ton lots, ex works. ex works.

PHENAZONE. — British material in 1-10-cwt, lots is 17s, per lb.; imported, from 13s, 9d,

PHENOL. — Basic prices for crystals in drums is 1s. 4d. per lb., and for LIQUID, B.P., 1s. 3\dd.

PHENYLACETIC ACID. — In 1-ton lots the price is now 5s. 6d. per lb.; 1-cw^t., 6⁵. per lb. Perfumery g ade, re-crystallised is from 8s. 6d. to 11s. 6d. per lb., as to quantity.

Alcohol

Prices of plain British spirit per proof

Prices of plain BRITISH SPIRIT per proof gal, are as follows:—

Ethyl Alcohol: (95 per cent, Gay Lussac, 66 o.p.); where the number of proof gall, taken over any one year ended December 31 is 300,000 or over the price is 2s, 9d.; 200 000 and less than 30°,000 2s, 9\frac{1}{2}d.; 100 000 and less than 200 000, 2s, 10\frac{1}{2}d.; 10 000 and less than 10 000, 2s, 10\frac{1}{2}d.; 10 000 and less than 50,000, 2s, 11\frac{1}{2}d.; 2,500 and less than 10,000. 2s, 11\frac{1}{2}d. Prices are exclusive of duty and 2s. 11d.; 2,500 and less than 10,000. 2s. 11½d. Prices are exclusive of duty and are for tank wagon lots.

The following grades are subject to a

The following grades are subject to a premium on the above prices as follows:—

Absolute Alcohol, 99.5 per cent., 74.5

o.p., 3d. more per proof gall; the special high strength (99.9 per cent., 75.2 o.p.), 5d. more; Doubly - Rectified Alcohol (J.V.R.), 95.8 per cent., 68 o.p. is 4d. more and P.I. Rectified Alcohol, 96.1 per cent., 68.5 o.p., 8d. more R.R. Absolute Alcohol (re-rectified, 99.7 per cent., 75 o.p.), 12s. 6d. per bulk gall, net.

Crude Drugs

Aconite. — Spanish napellus is 3s. 2d. per lb., duty paid, ex wharf.

AGAR.—Kobé No. 1 on the spot is from 17s. 6d. to 18s. per lb. Forward, April-May shipment, 15s, 9d., c.i.f., sellers.

ALOES.—Prime Cape is dearer at 180s, per cwt. with f.a.q. at 175s., on the spot; shipment, no offers from origin. Curação is 305s. on the spot and 290s., c.i.f., for shipment.

BALSAMS.—Quotations (per lb.) are:— Canada: 21s. 6d., spot. Copaiba, spot supplies sold, Peru, 9s. in bond. Tolu (genume as imported), is 25s., spot, and 25s., c.i.f.

Benzoin.—Sumatra block No. 1 on the spot is from £30 to £34 per cwt.

BISMUTH METAL.—Minimum rate is 16s. per lb.

BUCHU.—Spot offers are difficult to find with 2s. 3d, per lb, indicated. No shipment offers.

CAMPHOR. — Chinese (B.P.) powder remains scarce on the spot with oliers at 4s. 9d. to 5s. per lb., duty paid. \(\frac{1}{4}\)-oz. tablets are 5s. 3d. per lb.; 2\(\frac{1}{2}\)-lb. slabs 4s. 9d. per lb., duty paid. Synthetic powder is 3s. 7d. per lb. for 100-lb. lot.

CAPSICUMS.—East A rican on stalk are 160s, per cwt., spot. Abyss.nian, off stalk, 200s., spot.

CASCARA SAGRADA. — Firm. Offers for shipment a.e fully 285s, per cwt., c.i.f. Spot supplies are 325s., duty paid.

CASSIA BARK, — Whole on the spot is about 90s, per cwt, in bond, and for forward de ivery, 80s., c.if. Broken 67s, 6d., in bond, and 62s. 6d., c.if.

CHAMOMILE.—Belgian flowers are 5s. per lb. on the spot.

CHERRY BARK. — Scarce. Thin natural is from 1s. 10d. per lb., duty paid, and rossed, 2s. 3d., on the spot.

CHILLIES.—Mombasa are 300s. per cwt. on the spot, and 275s., c.i.f. Zanzibar are 280s., c.i.f. Sierra Leone not offering.

C1NNAMON.—Ceylon for shipment (c.i.f.), per lb.; OOOO, 3s. 9d.; OOO, 3s. 8d.; OO, 3s. 7d.; O, 3s. 6d.; fir.ts, 2s. 7d.; seconds, 2s. 6d.; thirds, 2s. $5\frac{1}{4}$ d.; quil ings, 1s. $8\frac{1}{2}$ d.; featherings, 1s. 1d.; chips, $5\frac{3}{4}$ d. to $6\frac{1}{4}$ d.

CLOVES.—Quiet. Zanzibar on the spot are 4s. $7\frac{1}{2}$ d. per lb.; prompt shipment. 4s. $2\frac{1}{2}$ d., c i.f.

COLCHICUM.—Corms on spot are offering at 2s. 3d. per lb, and seeds, 6s.

COLOCYNTH.—Good quality pulp on the spot is about 2s. per lb., duty paid.

Ergot. — Quiet, Portuguese for prompt shipment is easier at 15s, 6d, per lb., c.i.f.

GALANGAL.—For spot material of good quality 90s, per cwt. is asked.

Gentian. — French natural on spot is 100s. per cwt., and from 92s. 6d. to 95s., c.i.f.; sliced, 115s. spot.

Ginger.—Firm, African on the spot is 160s, per cwt. with shipment at 145s., c.i.f. Jamaican No. 3 is 240s.; no shipment offers.

GUM ACACIA. — Kordofan c'eaned sorts on the spot are quoted higher at 130s, per cwt. April-May shipment, 119s., c.i.f.

HENNA.—Firm Indian green leaves, old crop, are offered about 90s, per cwt. on the spot; shipment not offering. Sudanese are 100s., spot.

HYDRASTIS.—Root is 18s. per lb., on the spot.

lpecacuanha.—Spot market almost bare. No direct shipment offers.

KARAYA. — No. 1 gum on the spot is quoted at 200s, per cwt.; No. 2 is 140s.

KOLA NUTS.—African halves are available on the spot at 5½d, per lb.

LIQUORICE.—Natural whole root, spot: Anatolian, 55s, per cwt.; Russian, 40s.; Syrian, 37s. 6d. Block juice quotations are 195s, per cwt., delivered. Italian stick, from 310s. to 475s. per cwt., duty paid.

LOBELIA.—Herb is scarce on the spot. Nominal value is 3s, 6d, per lb,

MACE. — West Indian pale blade is 8s. 6d. per lb.; for shipment, 7s. 10d., c.i.f.

MENTHOL. — Spot. Chinese is about 29s. 6d. per lb., duty paid, and for shipment, 27s. 6d., c.i.f.

Mercury.—Dearer. Nominal spot value is from £74 to £75 per flask (76 lb.), ex warehouse.

MYRRH.—Aden selected sorts are quoted at £14 10s. per cwt, on the spot, Sutings are from £7 to £8,

Orris Root.—Offers of Florentine for shipment are from 200s, to 250s, per cwt. c.i.f., as to quality.

PEPPER.—Firmer. White Sarawak is 5s. 4½d. per lb., spot, with afloat parcels at 5s. 1d. to 5s. 2½d., c.i.f. Black Sarawak, special is 5s. 2d. per lb. spot; shipment (April), 4s. 6¾d.; (May), 4s. 6d., c.i.f. Black Malabar, 600s. May shipment, 500s., c.i.f., per cwt. spot.

RAUWOLFIA (SERPENTINA).—Spot prices nominal, Value for shipment 6s., c.i.f.

RHUBARB.—Chinese, Rough round, high dried is from 8s. to 8s, 9d, per lb. for sound. Wormy from 4s, to 6s.

sound. Wormy from 4s, to 6s,

SEEDS, — (Per cwt.), — Anise, — Spot,
Cyprian, 167s. 6d.; Bulgarian, 170s., duty
paid. CARAWAY.—Dutch slightly easier
with spot now quoted at 152s. 6d., duty
paid and shipment, 120s., c.i.f. CELERY.—
Indian steady with sellers at 210·, spot.
CORIANDER.—Steady. Spot, Moroccan, 60s.,
duty paid (55s., in bond); English, nominal
75s. Shipment, Moroccan firmer at
49s. 6d., c.i.f., for prefent crop. No newcrop prices yet quoted. CUMIN.—Market
dull. Spot, Cyprian is 125s.; Maltere
130s.; Mo.occan, 127s. 6d., duty paid.
Shipment: Cyprian afloat is 115s., c.i.f.;
Moroccan, 102s. 6d., c.i.f. DILL.—Ind'an
unchanged at 90s., spot. Fennel.—Market weak with Indian offering at 105s.,
pot, Fenugreek.—Steady, Moroccan is
48s. 6d. duty paid, spot London. MusTARD.—Market remains fim. English,
60· to 77s. 6d., according to quality.

SENEGA.— Spot. material offered at

SENEGA. — Spot material offered at 16s 3d.

SHELLAC.—Unchanged. Spot quotations are:—F.O.T.N. pure, 255s.; F.O. standard No. 1, 265s.; fine orange, 295s. to 335s. per cwt., ex-London warehouse.

TONKA BEANS. — Frosted Para on the spot are scarce at 6s, 6d, per lb. No shipment offers.

TURMERIC.—Nominal spot quotations are: Madras finger, 140s, and Rajapore. 130s, per cwt. Shipment: new-crop Madras finger from 105s, to 115s., c.i.f., as to position.

UVA URSI.—Spot offers are about 85s, per cwt.

VALERIAN.—Indian is 145s, per cwt. on the spot and from 130s, to 145s., c.i.f. Belgian, 185s., spot.

Vanillin. — Rates (per lb.) are:—5-cwt. lots, 30s.; 1-cwt., 30s. 3d.; 56-lb., 30s. 6d.; smaller quantities, 30s. 9d.

WAXES.—BEES'.—Dar-es-Sa'aam. Spot, about 490s. per cwt. April-May shipment, 472s, 6d, c.i.f. Sudanese and Abyssinian, spot 475s. and shipment, 4.0°., c.i.f. Benguella, 475s, duty paid and 420s., c.i.f. Candelilla.—Spot is unchanged at 635s. per cwt. Carnauba.—Prime yellow on the spot is 1,000s. per cwt.; shipment, 970s., c.i.f.; fatty grey is 680s, on the spot; shipment, 660s., c.i.f. Spermacett.—Case lots are about 1s. 9d. per lb.

Witch Hazel.—Leaves on the spot are

WITCH HAZEL.—Leaves on the spot are about 1s. 9d. per lb.

Essential and Expressed Oils

ALMOND.—B.P. is from 6s, to 7s, 6d, per lb., as to quantity.

AMBER.—Rectified on the spot is quoted

at from 1s. 6d, per 1b.

Bay—W. Indian is 8s. 6d. to 9s, per 1b.

on the spot.

BIRCH TAR.—Rectified is about 14s, per lb. in 1-cwt, lots,

CADE.—Spanish is about 2s, 3d, per lb, on the spot for 1-cwt, lots,

CAJUPUT. — Spot supplies are 15s, 6d. per lb.

CALAMUS. — Imported oils are offering

from 75s, per lb.

CAMPHOR, WHITE. — Chinese is 3s, 3d,

per lb., on the spot.

Cananga. — Supplies to come forward are quoted at from 60s, per lb., c.i f. Spot is from 62s, 6d, per lb.

CARAWAY. — English-distilled is offered at 45s.; imported oils are from 21s. 6d. per lb, early shipment.

CARDAMOM—Price per lb. is from 370s. for English-distilled and 280s. for imported.

CASCARILLA.—Imported is from 320s, per lb.

Cassia.—Original drums are about 10s. per lb. for spot and 9s. 3d., c.i.f.

CEDARWOOD, — Spot quotations for African are from 5s, per lb.

CHENOPODIUM.—1-cwt. lots are 52s. 6d. per lb.

CLOVE. — Madagascar leaf is 11s. 9d. per lb., duty paid, and 9s. 9d., c.i.f., for shipment. Redistilled stem oil, from 17s. 6d., and English distilled bud oil is now offered at 55s.

CUBEB.—English-distilled is 55s. per lb. and imported, 47s. 6d.

DILL. — B.P. English-distilled oil is quoted at 60s, per lb. Imported oils are offered at from 32s, 6d, per lb.

EUCALYPTUS.—Australian 70 to 75 per cent, eucalyptol on the spot is 4s. 10\forall d. per lb., and 80 to 85 per cent, 5s. 3d. Spanish, 70 to 75 per cent, 4. 6d., duty paid.

FENNEL.—Spanish sweet on the spot is quoted from 9s. 6d. per 1b.

Garlic.—English is from 55s. to 60s, per oz.

Lime. — Supplies of West Indian distilled are offered from 45s, to 50s, per lb. on the spot.

NUTMEG. — English-distilled oil is from 42s, 6d. to 44s, per lb. Imported oil is offered at 23s. 6d. per lb., duty paid for drum lots.

Orange.—Spot offers for sweet vary between 8s, and 10s, 6d, per lb, as to qualify. West African, new crop is quoted at 8s, 91., c.i.f. Californian sweet, 6s., c.i.f., and cold-pressed, U.S.P., 9s. 3d., c.i.f., subject to licence.

ORIGANUM. — In original containers the price is 13s. to 14s. per lb.

OTTO OF ROSE.—Anatolian is offered on the spot at 300s. per oz., and Bulgarian, 480s, ex warehouse.

Rue.—Spot offers are from 12s, 6d, per

SAGE.—Spanish is offered at from 9s. per lb. and Dalmatian at 50s., duty paid.
SANDALWOOD. — Mysore is 67s. to 68s. 6d, per lb.

Sassafras.—Brazilian is 5s. 9d. per lb., spot.

SPEARMINT.—Offers of U.S.P. quality at 42s., c.i.f., per lb.

THYME.—B.P.C. is about 93. 6d. per lb. TITREE. — Spot supplies are offered at 14s. per lb.

VETIVERT. — Bourbon in original drums on the spot is 92s. 6d, per lb.

WORLD TRADE

Phenol Production from Petroleum. Phenol Production from Petroleum.

Successful commercial production of phenol derived, for the first time, directly from 100 per cent. petroleum sources, is announced by Standard Oil Co. of California. The plant, now operating at the Richmond, Cal., refinery after several years of development, is designed for an annual output of 35 million lb. of aband. put of 35 million lb. of phenol.

Japanese Import Budget.—The Japanese Government has announced its import budget for the six months commencing April 1. The Government did not announce a breakdown of the budget by currency areas, but a breakdown for visible imports by commodity groups including the following:—Che-micals, \$3,062,000; medicinal supplies, \$3,885,000; and "agricultural" drugs,

Australia Eases Import Restrictions. The Australian Government has announced that from April 1 most items on the category A list of essential imports will be importable freely without quota restriction from non-dollar sources. They were previously restrictcd to 90 per cent. of imports in the base year. Category B, less essential imports, will be raised from 50 per cent. to 60 per cent. of base year.

Brazil Plans Surtax On Imports. — The Brazilian Finance Minister (Señor Oswaldo Aranha) is preparing a Bill for Congressional approval, which will impose a customs surtax on nearly all Brazilian imports. The Bill proposes surtaxes as high as 150 per cent, on the invoice value of some imports plus the premiums paid for foreign exchange. It is intended as a temporary measure until present customs tariffs have been revised states a message from Rio de Janeiro.

U.S. President's Economic Recommendations.—In a recent special series of foreign economic policy recommendations to the United States Congress President Eisenhower asked for: (1) A three-year extension of the present trade agreements act. (2) Authority to reduce tariffs on a selected range of goods by not more than five per cent. during each of the three years of the new act. (3) Simplification of America's complex customs procedures which constitute an "unwarranted" burden on trade. (4) Legislation to encourage a greater flow of United States capital abroad. (5) Modification of the restrictive "Buy American" act. (6) Moves to bring about currency convertibility. His recommendations closely followed those of the Government Commission on Foreign Economic Policy, headed by Mr. Clarence Randall, which recently studied ways and means of expanding world trade (C. & D., January 30, p. 117). In addition to seeking authority to reduce existing tariff rates by 15 per cent. on a selective basis during the proposed three-year extension of the Trade Agreement Act, Mr. Eisenhower asked for authority to reduce by not mo e than one-half the tariff on impo ts coming into the country in negligible quantities, and authority to reduce to 50 per cent. ad valorem any duties in excess of that figure.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," March 10 For flexible polyvinyl chloride plastics in piece and in sheets (24)

PLASTISHEEN, 725,042, by Everclean Textile Products, London, E.C.1.

For cosmetics and non-medicated toilet preparations all imparting a red colour (3)
RIDING HOOD RED, 724,682, by Max Factor & Co., Los Angeles, U.S.A.

From the "Trade Marks Journal," March 17

For agricultural and horticultural chemicals (1) NITROKAY, B724,400, by Imperial Chemical Industries, Ltd., London, S.W.1.

For photographic chemicals (1) CAPITOL, 725,771, by Johnsons of Hendon, Ltd., London, N.W.4.

For industrial chemicals (1) POLYSOLVAN, 726,368, by Farbwo Hoechst, A.G., vormals Meister Lucius Bruning, Frankfurt-am-Main-Hoechst, C Farbwerke

many. For animal soap, disinfectant soap and toilet

preparations for the hair (3)
ALADDIN, 704,522, by Aladdin Industries, Ltd., Greenford, Middlesex.

For soap pastes (3)

OLEX, 723,545, by Sanoper (1952), Ltd., Manchester.

For all goods (3)

STANHOME, 724,408, by Stanley Home Products, Inc., Westfield, U.S.A.

For cosmetic powder cases (3)

MINUETTE, 726,343, by Kigu, Ltd., London, N.W.10.

For non-medicated toilet preparations (3) ADVANCE, 726,468, by Coty (England), Ltd., London, W.I.

For detergents (3)

SATINOL, 726,563, by Laporte Chemicals, Ltd., London, W.1.

For pharmaceutical preparations (5) KAPSEAL, B720,791, by Parke, Davis & Co., Detroit, U.S.A. DISTAZID, 724,241, by the Distillers Co. (Biochemicals), Ltd., Liverpool. GW and device of bird, 724,327, by Ed. Geistlich Sohne, A.G., Wolhu-en, Switzerland. RUTANIN NO. 20, 724,949, by Rutanol G.m.b.H., Moosach, Bavaria, Germany. NEDROCARD, SYLVEMID, 725,828 and -30, by Aktiebolaget Bofors, Bofors, Sweden, PHASAL, 726,658, by Arthur H. Cox & Co., Ltd., Brighton. CAPSOIDS, 726,695, by British Chemotheutic Products, Ltd., Bradford.

For deodorants (5) STAG, B725.698, by Rexall Drug Co., Ltd., Nottingham.

For pharmaceutical and veterinary substances, medical and surgical plasters and bandaging materials (5)

SOFSTEP, 725,920, by the Scholl Manufacturing Co., Ltd., London, E.C.1.

For deodorants, sanitary substances and insect repelling preparations (5)

SCENTINEL MOTTOS, 726,337, by New Hygiene, Ltd., London, N.7.

For fungicides and insecticides (5)

VITOCLAD, 726,571, by Vitax, Ltd., Ormskirk, Lancs.

For chemical substances for use in the medical diagnosis of albumen in urine (5) ALBUTEC, 726,705, by H. R. Napp, Ltd., London, W.C.2.

From the "Trade Marks Journal," March 24

For agricultural and horticultural chemicals (1) CEREGAM, 726,411, by Bayer Agriculture,

Ltd., London, S.W.1, For detergents, non-medicated toilet preparations,

cosmetics and theatrical make-up (3) STERLON, 722,177, by Sternberg-Textil Akticbolag, Stockholm, Sweden.

For detergents (3)

DRONSAN, 723,090, by Gascoigne-Crowther, Ltd., London, W.C.1, CORGEL, 725,631, by George Eric Corner, Manchester,

For toilet soaps (3)

SENTRY, 725,706, by J. C. & J. Field, Ltd., Amersham, Bucks,

For perfumes (3)

PARFUMS PIERRE BALMAIN, B726,200, by Pierre Balmain, Paris, France.

For non-medicated toilet creams (3) RAYFILTA, 726,846, by Milton Antiseptic, Ltd., London, N.7.

For fungicides, insecticides, germicides, larvicides,

parasiticides, disinfectants and bactericides (5) HYGENOL, 714,200, by the Hygenol Co., Ltd., Leeds, 10, NADROL, 724,366, by Harker, Stagg, Ltd., London, E.I. OVOCLOR, 725,410, by the Murphy Chemical Co., Ltd., Wheathampstead, DEESTAN, 725,865, by the Standardised Disinfectants Co., Ltd., London, S.W.I. CEREGAM, 726,412, by Bayer Agriculture, Ltd., London, S.W.1.

For pharmaceutical foods, dietetic, infants' and invalids' foods, and vitamin preparations for addition to foodstuffs (5)

TERVALON, 717,979, by N. V. Tervalon, Maat_chappij voor Vocdingsmiddelen op Wetenschappelijke Basis, Utrecht, Holland.

For medicines (5)

TRYP-URE, 722,373, by Novo Terapeutisk Laboratorium A/S, Copenhagen, Denmark.

For vitamin preparations for addition to animal teeding-stuffs (5)

RIBOMIN, 724,131, by Schaje Weiss, London, E.C.1.

For all goods (5)

MARZINE, 724,346, by the Wellcome Founda-tion, Ltd., London, N.W.I. ROMILAR, 724,722, by Roche Products, Ltd., Welwyn Garden City. Herts. PROCIDOZE, PROCI-DOPS. PROCIDAURA, 726,121-22 and 124, by Harker Stagg, Ltd., London, E.I. ETHNETS, 726,452, by Allen & Hanburys, Ltd., London, E.2. SEDUMAX, 726,887, by Calmic, Ltd., Crewe.

For medicated lotions for veterinary we by external application (5)

PROGAL, 724,895, by Consolidated Chemicals, Ltd., Wrexham.

For veterinary preparations (5)

ENTAVET, 725,707, by Allen & Hanburys, Ltd., London, F.2.

For toilet paper, paper tissues, towels and handkerchief, all being medicated (5)

COURTESY, 726,077, by Japa Paper Products. Ltd., Leeds.

For pharmaceutical products for the treatment of the skin (5) PROCIDERM, 726,123, by Harker Stagg, Ltd.,

London, E.1.

For medicated confectionery (5)

JOKERS, 726,146, by Rowntree & Co., Ltd., York.

For pharmaceutical preparations containing amines (5)

PLENAMINS, 726,315, by Rexall Drug Co., Ltd., Nottingham.

For photographic apparatus (9)

STARLET, 726,918, by Kodak, Ltd., London, W.C.2.

For surgical instruments made of steel (10) LABSTEEL, 726,771, by Down Bros. & Mayer & Phelps, Ltd., London, S.E.1.

From the "Trade Marks Journal," March 31 For polyvinyl chloride and co-polymers of polymerisable monomeric compounds in which vinyl chloride or a vinyl compound predominates, All for use in industry and science (1)
VINNOL, 710,738, by Wacker-Chemie

VINNOL, 710,738, by Wacker-Ch G.m.b.H. Haftung, München, Germany.

For industrial, scientific and photographic chemi-

RAINYCELLA, 718,066, by J. H. Benecke, Hannover-Vinnhorst, Germany.

For chemicals for use in the manufacture of

BISOMEL, 723,923, by the Distillers Co., Ltd., also trading as British Industrial Solvents, London, W.1.

For industrial and agricultural chemicals (1) SOLEXATE, 723,152, by Marine Oil Refiners of Africa, Ltd., Simonstown, Union of South

PRINT AND PUBLICITY

Medical Propaganda

British Schering, Ltd., 229-31 Kensington High Street, London, W.8: "Oblivon" (do:ase indicator and sampling card), "Neutradoma" (directions and diet leaflet, sampling card).

PHARMACIUITICAL LABORATORIES GEIGY, LTD., Rhodes, Midd'eton, Manchester: "Butazoldin" (6-p. leafiet); "Tromexan" (2-p. leafiet). PHARMACIUITIAL SPELIALITIS (MAY & BAKER), LTD., Dagenham, Essex: "Largaetil" (8-p. leafiet); "Phenergan and Anthisan" (card); "Soneryl" (blotter); "Intraval Sodium," "Lar,actil" (24-p. and 32-p. booklet.); "In a Dan,e.ous Illness, call in Three Dec.ors: Sulphath.azole, Sulphamerazine, Sulphadiazine" (4-p. leaflet).

ROLHE PRODUCTS, LTD., 15 Manchester Square, London, W.1: "Ron'col' (2-p. and 4-p. leaflets and blotter); Vademecum 1954 (90-p. booklet); "Gantrisin" (8-p. leaflet); "Ro-A-Vit" (blotter).

ROUSSEL LAEORATORIES, LTD., 847 Harrow Road, London, N.W.10: "Aminorone Pregnancy Test" (4-p. leaflet); "Chlomycol Ear Drops and Eye Drops," "Angioxyl Hypotensive Pancreatic Hormone" (8-p. and 4-p. leaflets),

Sandoz Products, Ltd., 134 Wigmore Street, London, W.1: "Cafergot" (4-p. leaflet).

SHARP & DOHME, LTD., Hoddesdon, Herts: "Phedios" (4-p. leaflet); "Penbenemid" (4-p. leaflet); "Ad.tate" elixir, "Intensive Oral Pen.c.llin Therapy with Penbenemid Tablets," "Pentrisamide Tablets" (4-p., 6-p. and 12-p. leaflets).

Periodicals

ABBOTT LABORATORIES, LTD., Perivale, Greenford, Middle.cx: What's New, No. 13. Pp. 18.

Ayrton, Saunders & Co., Ltd., Hanorer Street, Liverpool: 1954 list of drugs and tablets, Pp.

CHILEAN IODINE EDUCATIONAL BUREAU, Stone House, Bishopsgate, London, E.C.2: Current Iodine Literature, No. 3, 1954, Pp. 46, Iodine Intornation, No. 38, Pp. 55; No. 39, Pp. 12; No. 40, Pp. 10; No. 41, Pp. 8.

COENE PERE & FILS S.A., 323 Rue du Progrès, Bruxelles, Belgium: L'Alambic, No. 23. Pp. 4.

GLAXO LABORATORIFS, LTD., Greenford. Middle-

ALLEN & HANDIDVS LTD (from April 1) Muquet Elegrit Le Car-

sex: The Glaxo Volume, No. 9, Pp. 48, (and 8-p. supplement).

HENRY WIGGIN & Co., Ltd., Wiggin Street, Birmingham, 16: Wiggin Nickel Alloys, No. 23. Reviews work on types of industrial heating elements, ultra-violet and infra-red ray radiation, filtration, incubation, etc.

INNOXA (ENGLAND), LTD., 1 Eden Street, London. N.W.1: The Innoxa Approach, Vol. 2, No. 3. March 1954. Pp. 4.

Price Lists

CUXSON, GERRARD & Co., LTD., Fountain Lane, Oldbury, Brmingham: Price list for ligatures and sutures, Pp. 12. Surgical dressings, March 1954, Pp. 8.

EDWARD GURR, LTD., 42 Upper Richmond Road, East Sheen, London, S.W.14: Michrome Biological Stains and Reagents, March 1954, Pp. 48.

EVANS MEDICAL SUPPLIES, LTD., Speke, Liverpool, 19: List A, March 1954. Pp. 148.

W. J. GEORGE & BECKER, LTD., Nivoc House. Ealing Road, Alperton, Wembley, Middletex: Laboratory chemicals, February 1954, Pp. 120.

HALEX, LTD., Highams Park, London, E.4: Home trade list 1954, Pp. 18.

LEON DAVIS & Co., 9 Laurence Pountney Lane, Cannon Street, London, E.C.4: Gummed tapes, 1954. Pp. 4.

THE MURPHY CHEMICAL CO., LTD., Wheathampstead, Hertfordshire: Inrecticides, fungic des and fumigants for hort cultural and agricultural use. Spring 1954. Pp. 20.

Show Material

JOHN MORRELL & Co., Ltd., 57 Victoria Street, Liverpool, 1: Cardboard counter display unit for Red Heart cat and dog foods, in form of a cat or dog basket to hold tins of food.

Catalogues

HALEX, LTD., Highams Park, London, E.4: 1954 Catalogue. Pp. 52.

L. LIGHT & Co., LTD., Poyle Estate, Colnbrook, Bucks: 1954 organic chemicals catalogue. Pp. 42.

MONSANTO CHEMICALS, LTD., Victoria Station House, London, S.W.1: "Monsanto Chemicals and Plastics." Pp. 18.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Sunday, April 11

JUNIOR BRANCH, MANCHESTER AND SALFORD BRANCH, PHARMACEUTICAL SOCIETY, ramble via Poynton-Bowstones-Lyme Park. Meet at No. 20 bus stop, Piccadilly, Manchester, at 9,45 a.m.

Monday, April 12

ISLE OF THANET BRANCH, PHARMACEUTICAL SOCIETY, Belle Vue Hotel, Cliftonville, at 8 p.m. Annual meeting. Mr. J. F. McNeal (a member of the Society's Council) on "Pharmaceutical Reforms We Would Like."

PLYMOUTH BRANCH, PHARMACIUTICAL SOLIETY, lecture theatre, Freedom Fields Hospital, Plymouth, at 7.30 p.m. Mr, W. R. Roberts (chief inspector of the Pharmaceut'cal Soc ety) giving "A Commentary on Poisons Law."

SOUTHAMPTON BRANCH, PHARMACEUTICAL SOCIETY, Polygon Hotel, Southampton, at 7.30 p.m. Annual meeting.

Tuesday, April 13

NORTH STAFFORDSHIRE BRANCH, PHARMACEUTICAL SOCIETY, Grand Hotel, Hanley, at 7.30 p.m. Annual meeting.

Wednesday, April 14

BIRKENHEAD BRANCH, PHARMACEUTICAL SOCIETY, Prenton Hotel, Birkenhead, at 8 p.m. Addresses by Miss J. Hinks and Mr. J. C. Bloomfield (candidates for election to the Society's Council).

SWANSEA AND WEST GLAMORGAN BRANCH, PHAR-MACEUTICAL SOCIETY, Mackworth Hotel, Swansea, at 7.45 p.m. Annual meeting.

LOCAL OFFICERS

Pharmaceutical Society

Rhyl Branch.—Chairman, Mr. T. Emlyn Jones; Vice-chairman and Benevolent Secretary, Mr. D. B. Goodall; Treasurer, Mr. Llewelyn Parry; Secretary, Mr. A. Pughe Jones, Millbank Road, Rhyl, Flints.

Pharmaceutical Committees

Eastbourne.—Chairman, Mr. H. J. Seath; Vicechairman, Mr. A. C. Harmer; Secretary and Treasurer, E. Hunt, 30 Grove Road, Eastbourne.

C. & D. WEEKLY LIST OF PRICE CHANGES

A=Advanced; R=Reduced; 1.R.P.=Inclusive Retail Price; *=Tax 25 per cent.; †=Tax 75 pcr cent.

| ALLEN & HANBURYS, | | | | | | Muguet Ficurit, Le Gar- VICK INTERNATIONAL, LID. (new size) | |
|--|------|---------|-----|---|----|---|--|
| Doz. I.R.P. d.nia Blanc [†] , Pagan [†] , Vick Cetamium cough syrup [*] , | | | | | | | |
| 7 Mintophylithe tablets, 9 7 gms, | | | | | | | |
| 100 250 | | 0 | | 9 | | | |
| 230 | | ch | U | , | М | | |
| 1.000 | | 0 | 24 | 0 | D | | |
| 1,000 | 10 | U | 24 | U | K | 2 oz. 426 8 80 0 A Resila Eight medical spray 8 9 Each | |
| EVANS MEDICAL SUPPL | TICS | LOCE | | | | modèle de luxe 80 0 180 0 A DUNCAN, FLOCKHART & CO., LTD. | |
| Bitevan, 20 m crogm. per mil | | LILL | | | | Pholodine syrup, 4 ft. oz. 3 0 | |
| ampoules, 6 | ٠., | 81 | 2 | 3 | D | ROBERTS & CO. (from April 1) 16 ft. oz. 9 0 | |
| | , | 0.1 | - | 3 | ,, | Colural* 2 8 4 90 fl. oz. 51 0 | |
| 50 microgm, per mil, ampoules, 6 | 2 | 2 | 2 | 0 | D | Robuval*, 8 oz. 4 9 A | |
| | 2 | 3 6 | | 8 | | 40 oz. 19 0 A EVANS MEDICAL SUPPLIES, LTD. | |
| 10-mil vial | 3 | 0 | ** | | K | | |
| 100 microgm, per mil, | , | 41 | | 6 | n | | |
| ampoules, 6 | 3 | 4½ 0 | | 4 | | | |
| 10-mil vial | 3 | U | 0 | 4 | K | | |
| Procaine penicillin in oil, | , | | | , | n | | |
| 10-mil vial | 0 | 4 | 9 | 6 | K | | |
| Streptomycin sulphate, | | | 222 | | | Ethisteronc tablets, | |
| 200 mega units | | | 333 | 4 | A | P.A.T.A. PROTECTED LIST 25 mgm., 25 19 8 29 6 500 371 0 556 0 | |
| COM TED | | | | | | 500 571 0 550 0 | |
| GOYA, LTD. | | oz. | - | | n | | |
| Corvette shaving stick* | | 3 | | 6 | | Articles Trade Association), and Novo ultralente, 80 RRAND & CO., LTD. Doz. units per mil. 10-mil vial 99 0 11 0 | |
| refill* | | 4 | I | 6 | K | | |
| lather shaving cream* | 17 | 3 | 2 | 6 | K | Call's foot jelly, 10-oz, jar 18 5 2 0 A | |
| brushless shaving cream* | 17 | 3 | 2 | 0 | K | GLAXO LABORATORIES, 1.TD. (from April 5) | |
| | | | | | | D.D. CO., LTD. (new size) Streptomycin sulphate stab- | |
| PICOT SALES, LTD. | | | | | | D.D.D. Balm*, tube 12 4 1 7½ ilised injection, 1 gm. in | |
| Eau de Cologne† and Eau | - 0 | _ | _ | | | 3 e.c. 3-e.c. ampoules, 10 32 6 | |
| de Lavande†, 1 oz. | 28 | | | 3 | | RELIANCE RUBBER CO., LTD. (additions) 15-c.c. vials, 10 137 6 | |
| 2 oz. | 44 | | | 3 | | Hot-water bottles:— Dimycin stabilised injec- | |
| 4 oz, | 72 | | | | | British warm 60 0 7 6 tion, 0.5 gm. streptomy- | |
| 8 oz. | 120 | 0 | 22 | 6 | A | Baby warm 45 0 4 11 ein and 0.5 gm. di- | |
| Frictions: Picot No. 5†, | | | | | | Sleeping Beauty 48 0 5 4 hydrostreptomycin in 3 c.e. | |
| Le Train Bleu†, Grati- | | | | | | vials, 3 c.c., 10 32 6 | |
| tude†, Le Gardénia | | | | | | SCOTT & TURNER, LTD. 15-e.c., 10 137 6 | |
| Blanc†, Eau de Cologne†, | | | | | | Delrosa rose hip syrup, | |
| ¹ / ₄ OZ. | 16 | 0 | 3 | 0 | A | 6 oz. 20 3 2 3 A POLYPHARMA LABORATORIES, LTD. | |
| Perfumes: Picot No. 5†, | | | | | | 12 oz. 45 0 5 0 A Emphyeard tablets*, 50 53 0 7 0 | |
| Le Train Bleut, Le | | | | | | Dimp anti-midge cream* 9 8 1 6 A 250 240 0 | |



A new treatment for threadworm infestation

'Entacyl' (piperazine adipate tablets), has been found to be a particularly effective oxyuricide. Its action is rapid. Its taste is pleasant. Its administration is not accompanied by nausea or other side effects even in very young children. Complete eradication is obtainable without the use of an enema.

'ENTACYL'

Tablets containing Piperazine Adipate 300 mg.

Trade Mark (Bit. Pat. Appn. No. 29123/53)

Bottles of 25 tablets 3/- 5/3

,, ,, 100 ,, 10/- 17/6

,, ,, 500 ,, 42/-

THE BRITISH DRUG HOUSES LTD LONDON, N.I

ENT/T/542



Your customers can't miss Spicers A1 advertising

> They see it all over the country in the dailies, local papers and the women's magazines. Here's your chance to push up sales. Tell your customers that you stock Spicers A1. Display it in your windows and on your counters. And always keep well supplied.

Spicers A 1

TOILET PAPER

Sells at I/- roll or flat pack

SPICERS LIMITED, Union Street, London, S.E.I Telephone: Waterloo 5871



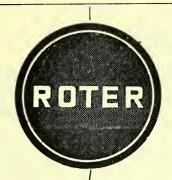
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tablets -

for gastritis and peptic ulcer, both chronic and acute.

Particularly indicated for the effective treatment of peptic ulcer cases of long standing and those refractory to other types of therapy; also for cases of post-operative relapse and recurrence.



Attractive display material available on request

| PACKINGS | | | | Retail price including P.T. |
|---------------------|------|------------|------|-----------------------------|
| Trial size | | 40 tablets | | 7/2d. |
| Standard size | | 120 ,, | | 20/7d. |
| Full treatment size | | | | 103/-d. |
| Dispensing Packs | | 720 ,, | | P.T. exempt |

Stocked by all principal wholesale houses.

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ANGINA OF **EFFORT**

BRITONY

An ever increasing demand is being created by constant Medical propaganda. We therefore seek your co-operation in its distribution.

Obtainable through your wholesale house or direct from ourselves.

PRICE TO YOU-

Tube of 50 Pills 39/9 dozen plus P. Tax Dispensing Pack, 250 Pills 17/6 Net

RETAILING AT-

Tube of 50 Pills -

Non-toxic Antidyspnoeic

IN TWO FORMS:

Tablets for oral administration AND

Suppositories for adult and child treatment.

Indicated in Essential and Symptomatic Asthma, Emphysema, and other causes of respiratory distress.

| PACKINGS | P.T. inc. | PRICES |
|----------------------------|-----------|---------------------|
| TABLETS: Tin of 30 | 5/6 | 4/3½ P.T. included. |
| Dispensing Pack: 250 Table | ts | 20/- per pack, plus |
| SUPPOSITORIES: | | 5/- P. Tax |
| Adults: Carton of 6 | 5/6 | 4/3½ P.T. included. |
| Children: Carton of 6 | 4/6 | 3/6] P.T. included |



Manufacturing Chemists, MOUNT PLEASANT, ALPERTON, WEMBLEY, MIDDLESEX





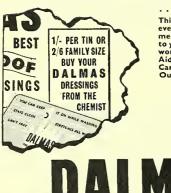


Do yourself a good turn

Next time a customer asks for a waterproof first-aid dressing: sell her Dalmas. That customer will be back... for more. The better value and quality in the 'blue box' means repeat sales.

TRY THIS TEST

Take a circular Dalmas Waterproof Dressing. With your hand flat, place the dressing on a knuckle, 'Now close your fist slowly. See how the dressing stretches in EVERY direction. DALMAS DRESSINGS ARE FULLY FLEXIBLE. That's why they 'stay put' so much better.



. . . from the Chemist

This phrase appears on every Dalmas advertisement, directing customers to you. Complete the good work with Dalmas Sales Aids. Attractive Counter Cards, Displays and Sell-Out Boxes.



WATERPROOF

MADE BY DALMAS LTD., LEICESTER & LONDON. EST. 1823.

Still the most reliable remedy for Rheumatism

For nearly 40 years Curicones has been kept abreast of medical research. With its present formula, it is certainly the most reliable general remedy you can recommend to Rheumatic sufferers.

And its advertising is never allowed to get in a rut. Now that it is being stepped up in volume, watch Curicones sales begin to grow. Never let yourself run out of stock of the 5/4, 13/4 or 25/6 sizes.

We still have small supplies left of our novel "weather indicator" showcard. It is most effective and surprisingly accurate. Send us



your name and address for one and see the interest it attracts.



AND PATA

STEPHEN MATTHEWS & CO., LTD., 19/21 Farringdon Street, London, E.C.4



... about KAY'S for coughs

He is being told! Illustrations and captions like the one above, backed by a compelling sales story, have been appearing in the National Press—telling millions of men and women all about Kay's. You can profit from this publicity. Keep well stocked with Kay's Linseed Compound and Kay's Compound Pastilles—and have Kay's display material right in the front line on your counter!

KAY'S

LINSEED COMPOUND

also K AY'S Compound Pastilles



WHITECROSS
SUNGLASS
SALES
BOXES

WHITECROSS
OPTICAL COMPANY
(LONDON) LTD.
55 WHITECROSS STREET
LONDON, E.C.1

Tel. MONarch 0114

what's my line?

There is no doubt of the ever increasing popularity of Gill's. More and more people are proving that it really does remove Dandruff at the first application. Word of mouth recommendation is sending sales of Gill's soaring higher — don't miss your share of this extra business.

You can recommend Gill's for both adults and children with complete confidence. From all wholesalers at 16/8d. per dozen to retail at 2/6d. per bottle.

Made and distributed in 12 European countries.

★ FREE SAMPLE

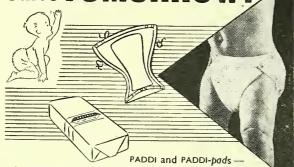
If you've not yet tried Gill's Shampoo, the makers will gladly send a generous Free Sample together with descriptive literature on receipt of Trade Card.

BEAUTISALES LTD., 35 OLD BOND STREET, LONDON, W.I Telephone: Hyde Park 25

Eire Agents: Nur-ra Ltd., 132 St. Stephen's Green, Dublin







2 products with a 'plus' appeal. A wonderful improvement on the conventional 'nappy' that solves a big problem for the busy young mother. Sell her PADDI and ensure repeat sales of PADDI-pads. They're better for babies, less trouble and labour-saving for mother. Supported by attractive advertising in women's journals, these profit-making lines can mean big business for YOU! Paddi retails at 6/-. Paddi-pads in packets of ten 1/7d. Please write for details.

PADDI AND PADDI - pads

Another Mene Product

ROBINSON & SONS LTD . CHESTERFIELD & LONDON

MORE SALES-MORE PROFIT

Your wholesaler can supply you promptly with

BESORBON

(REGD. TRADE MARK)

MEDICINAL SNUFF

for colds and catarrh

but always order at least one dozen and so secure the attractive and convenient counter display box which, on show, will increase your sales.

MORE SALES - MORE PROFIT

KEMSALES LTD., 20 EASTCHEAP, LONDON, E.C.3

PHARMACEUTICALS

BULK AND TABLETS

P.A.S. GLYCINE FERROUS GLUCONATE NICOTINAMIDE SULPHAGUANIDINE

HALEWOOD CHEMICALS LTD.

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Ambassador 4198



THE REGNA CASH REGISTER CO.

Proprietors: The Joeli Safe Co. (London) Limited
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"RONDWASTER"
NIGHTDRIVING GLASSES

-The new accessory that every Motorist wants!

Manufacturers: FISH OPTICAL CO. LTD. *

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**Makers of the world-famous 'SUNGARD' Sunglasses

★ Makers of the world-famous 'SUNGARD' Sunglasses

WE WANT OF A OF OF Sole Manufacturers: MILLAMALT

JEFFREYS, MILLER & CO. LTD., Leyland Mills, Wigan. (London Department 19 Brookside Rd. N.)

BECAUSE OF THE BUTTERSCOTCH FLAVOUR



Trade Mark

LIQUID SPRAY

has an even greater sale because it exterminates Moths, their Eggs and Grubs and is absolutely stainless and pleasantly perfumed.

Meet this ever-growing public demand by stocking MOTHDOOM Liquid Spray, which is sold in Popular sizes at 3/9 and 7/- and in Bulk sizes from ½ gallon upwards.

THE NEW BULB SPRAYER

which is effortless in its application, extremely durable, and has nothing to get out of order. It is mounted on a cap ready to fit both 8 and 16 ounce sizes of Mothdoom Liquid Spray. The essential adjunct to Mothdoom.

Retailing at 5/6 each — packed in display boxes of 6.

LIBERAL TRADE DISCOUNTS

From Leading Wholesalers or Trade Enquiries to:



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BOTTLE MANUFACTURERS

VARICOSE VEINS



2-WAY STRETCH ELASTIC HOSIERY

This hosiery gives full two-way support and is invisible under most ordinary stockings.

available in the following styles

NYLON YARN

Seamless, sheer and fully fashioned.
Proofed for ladder resistance.
Reinforced closed heel.

LASTEX YARN TYPE

Seamless, fully fashioned, durable.
Proofed for ladder resistance.
Reinforced closed heel.

Write for prices, material samples, measurement chart and order forms

COLBY PRODUCTS LIMITED

PUNCHES

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Whatever your needs, get in touch with us.
We have helped others
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"KWICKDRY"

CREPE PAPER TOWELS

IN PERFORATED ROLLS
FOR THE MODERN HOUSEWIFE

THEY SAVE WORK and DRUDGERY and ARE STRONGER WHEN WET.

They serve a multitude of purposes. Of a soft, pleasing, crepe texture "KWICK-DRY" TOWELS are very absorbent, can be squeezed like a cloth yet do not disintegrate.

FOR DRYING HANDS DRAINING FRIED FOOD CLEANING POTS & PANS, etc.

"THE TOWEL THAT REALLY DRIES—AS THE NAME IMPLIES"
Wire Towel Holders supplied if required

This NEW habit is catching on! Are you cashing in? Samples and prices from the Paper Specialists:—

FREEDER BROTHERS PAPER MILLS
BRIMSDOWN : ENFIELD : MIDDLESEX

Telephone: HOWard 1847 (5 lines). 'Grams: Sylkocrepe, Enfield

TONGUE DEPRESSORS

* LOWEST PRICES SINCE THE WAR

IMPORTED-PRE-WAR QUALITY

Size 6 in x 1 in. x 2 mm. thick Danish beech, perfectly finished.
Boxed 100's. Minimum order 10,000.

Annual contracts may be spread over a year, entitling buyers to reduced prices, and deliveries as required. Write for details.

APPLICATORS, hitherto unobtainable, can now be from stock, shipments having recently arrived

Wholesale Houses only supplied.

ASHWOOD TIMBER INDUSTRIES LTD.

Specialists in Veneer and Plywood Products for all Trades.

IREX HOUSE, MINORIES, LONDON, E.C.3

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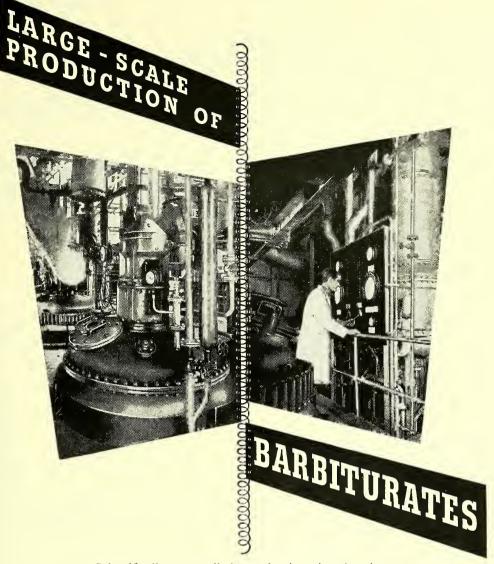
GALLIC ACID PYROGALLIC ACID

(RESUBLIMED, PURE CRYSTAL AND TECHNICAL)

AND DERIVATIVES

WHOLESALE AND EXPORT ONLY

J. L. ROSE, LIMITED, ABBEY ROAD, BARKING, ESSEX

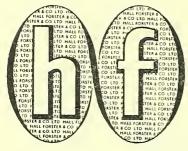


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symbol of the Hall Forster service for the retail pharmacist

Seasonal 'own-name' Counter Goods:

GLYCERIN HONEY and LEMON · GEE'S LINCTUS

CODEINE LINCTUS · BLACKCURRANT COUGH SYRUP

COMPOUND CODEINE TABLETS

Special terms for assorted orders

Drugs, Ethicals, Tablets,
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BRANNAN THERMOMETERS

CLINICAL - HOUSEHOLD - INDUSTRIAL When ordering Thermometers, insist upon Brannans — made by highly skilled workers at Britain's most modern Thermometer Factory.



SANCTIONED ON N.H.S. Prescriptions (Form E.C.10)

EPHAZONE tablets

The rational, symptomatic remedy for bronchial spasm in ASTHMA & BRONCHITIS

Containing in each tablet:

Ephedrine \(\frac{1}{4}\) grain - Theobromine \(\frac{1}{2}\) grain

Phenazone I grain, Calcium gluconate \(\frac{1}{4}\) grain

This preparation is not advertised to the general public.

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GIGANTIC GIGANUS SECTO BONUS OFFER

HERE IS YOUR OPPORTUNITY TO OBTAIN RECORD PROFITS.

MAKE YOUR CHOICE FROM THESE BIG OFFERS ON COMBINED

ORDERS FOR SECTO POWDERS HOURS ORDERS FOR SECTO POWDERS, LIQUIDS, AEROSOLS, HAND

SPRAYERS AND FLYCARDS :-SPECIAL DISCOUNT ON £10 VALUE = 66%

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All Secto Products can be included for Bonus Discount to get

BIGGEST PROFITS BIGGEST BONUS

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SECTO PRESS BUTTON AEROSOLS ARE PACKED FULL. ATTRACTIVE NEW DISPLAY MATERIAL PROVIDED

WILL SELL TH RAPIDITY 1/3 ANT POWDER

THESE

SQUEEZE DRUM



I/- SECTO **B.H.C. SOUEEZE** DRUM POWDER



CONTINUOUS **ACTION PRESSURE** SPRAYER 3/9

POWDERS

9d. SMALL SIZE
1/- B.H.C. SQUEEZE DRUM
1/3 D.D.T. WITH SYNERGISTS

ANT POWDER
1/3 SPECIAL FORMULA IN SQUEEZE DRUM

6d. PKTS. CONTAINING 3 CARDS

LIQUIDS

7/--40 oz. 1/9 - 8 oz. 19/-- I gall. 2/3 - 10 oz.3/-- 16 oz.

HANDSPRAYERS

CONTINUOUS ACTION 3/9 SINGLE ACTION 3/9

SEND YOUR ORDER NOW FOR DELIVERY BY APRIL 30th

CUPAL LTD.

MANUFACTURING CHEMISTS BLACKBURN





MADE BY RAYNER AND COMPANY LIMITED, LONDON, N.18



PURIFIED CRYSTALLINE TRYPSIN.
FOR PHYSIOLOGIC DEBRIDEMENT OF
NECROTIC TISSUE AND INTRAPLEURAL USE.

TRYPTAR AEROSOL

FOR BRONCHIAL ASTHMA, ACUTE AND CHRONIC BRONCHITIS, BRONCHIECTASIS AND ATELECTASIS.

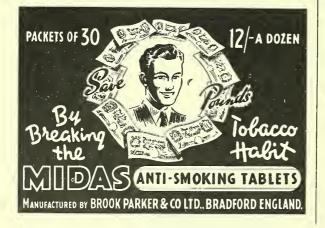
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Always in demand! THOMAS HARLEY LTD., PERTH, SCOTLAND

One shilling & sevenpence PROFIT on each sale!



NERVONE

5s. 8d. 22s. 7d. Incl. P.T.

Retail Price

The New Biochemic Tablet

'NERVONE', CECIL HOUSE, HOLBORN VIADUCT, LONDON



The purely biological treatment for most intestinal, para-intestinal kidney and bladder infections

ENTEROFAGOS is one of the series of M.B.L. preparations which enjoy the confidence of the Medical profession in this country and overseas. It is of established therapeutic value in the treatment of infective conditions of the gastro-intestinal tract, kidneys and bladder.

ENTEROFAGOS contains the active bacteriophages against Staphylococci, Streptococci, B. coli, B. Typhosus, B. paratyphosus, B. dysenteriae and Enterococci. Whatever the dosage, it can be given to adults or children without fear of harmful reactions, and this combination of efficacy and safety makes ENTEROFAGOS the ideal treatment for the infective conditions indicated.

The preparation is contained in ampoules to be taken orally according to the instructions supplied.

Indications

Most cases of Diarrhoea respond rapidly to treatment with ENTEROFAGOS. Colitis, Enteritis, Entero-colitis, Typhoid and Paratyphoid Fevers, Bacillary Dysentery, B. Coli Infections, Food Poisoning are equally responsive to its treatment.



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CARGREEN ROAD, SOUTH NORWOOD, LONDON, S.E.25



Used for a year...

ANOTHER FLEXTRON TOOTHBRUSH ENTHUSIAST

"I have now used the hard texture Flextron brush
which you sent me continuously for a year. It is
the best brush by far that I have ever used and I
the best brush by far that I have ever used and I
have used it in no uncertain manner. There has
heen no loosening or dropping at all, it has kept
been no loosening or dropping at all, it has kept
its shape and not bent outwards appreciably, as
its shape and not bent outwards appreciably, as
the ordinary nylon ones do; it has kept hard and
strong and is in fact almost as good as new and
strong and is in fact almost as good as new and
outwards appreciably.

The same and the service
for a further similar period. Others to whom I have
for a further similar period. Others to whom I have
mentioned this brush have had equally pleasant
experience.

You certainly are to be congratulated on Flextron—it is wonderful stuff."

Good for another

Wisdom Flextron toothbrushes are without any doubt the finest we have ever made—as important an advance as nylon itself was when it first came out.

They're better toothbrushes—and give you a better profit, too.



WISDOM SELLS TWICE AS FAST AS OTHER TOOTHBRUSHES

ASPRO

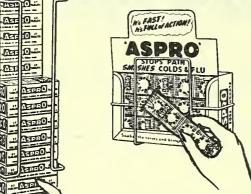
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by return.

An 'ASPRO' stock display gives you your maximum share of this enormous demand. If you require a 27's size or 5's size wire unit, just send a card to us at Aspro Limited, Trading Estate, Slough, Bucks and they will be sent

WIRE UNITS AT WORK!



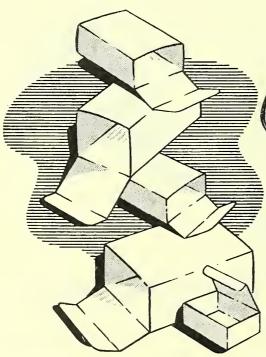
Every day they are at work, making selling easy, looking clean, streamlined, simple and - most of all—acting as REMINDERS to every 'ASPRO' user.

And how many 'ASPRO' users ARE there? The answer, as we compute it, is that . . .

IN BRITAIN EVERY DAY OVER 200,000 PEOPLE SAY-

MADE BY ASPRO LIMITED. SLOUGH, BUCKS

ASPRO



Phone 2234

SUPPLIED IN THE FOLLOWING SIZES:

T1 For 20 Aspirin Tabs T3 For 50-60 Aspirin Tabs

T2 For 25-30 Aspirin Tabs T4 For 100 Aspirin Tabs

T5 For 100 Codeine Tabs

T6 For 48 Solprin Tabs

C25 For 25 Codeine Tabs

 ALSO WRAPPED POWDER SKILLETS P& For 4 ozs P8 For 8 ozs P16 For 16 ozs.

PRINTED OR PLAIN CARTONS OF ANY SIZE SUPPLIED TO CUSTOMER'S ORDER

Write to

PLAIN EX

STOCK

SILVERLOCK

ANDOVER, HANTS

THE CHEMISTS' AND HOSPITAL PRINTERS

SPECIAL BONUS OFFER!

Bristows LANOLIN Shampoos

52% on new LIQUID and PROFIT POWDER shampoos

PARCEL 'A'

6 dozen + 3 dozen
POWDER + LIQUID
charged as
4 dozen + 2 dozen

YOUR OUTLAY 18/4
(plus P.T)

YOUR PROFIT

PARCEL 'P'

I2 dozen
POWDER
charged as
8 dozen

YOUR OUTLAY 22/(plus P.T)

YOUR PROFIT

PARCEL 'L'

6 dozen
LIQUID
charged as
4 dozen

YOUR OUTLAY 14/8 (plus P.T)

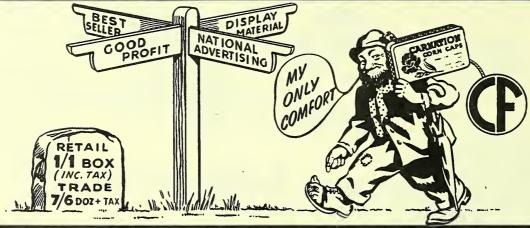
YOUR PROFIT

CLOSING DATE FOR THIS

52% PROFIT BONUS OFFER MAY 15th.

You may order as many bonus parcels as you wish by this date.





the most popular Corn remover

and for Callouses - C

A PRODUCT OF

Cuxson Gerrardelo.L

DBURY . BIRMINGHAM.



Collapsible Tubes from Stock, in I gross lots and above, for Chemists and Laboratories who make their own creams and ointments.

Price list and samples upon request

IMPAX WORKS (Mail Order Department) Browells Lane, FELTHAM, Middlesex Telephone: Feltham 4211 (2 lines)



CARBOY

LEIGH & SONS METAL ORKS LTD

CARBOYS PACKED CARBOYS CARBOY TILTERS AND BARROWS SAFETY CRATES TOP PROTECTORS

ORLANDO STREET, BOLTON TELEPHONE: BOLTON 312

Nothing else but Prestoband!

No, nothing else will do. Like everyone who knows what's what, she must have some Prestoband handy! She knows from experience there's nothing as good as this quickest, cleanest, healthiest way of dressing a wound or strapping a muscle. It's easy on, painless off, and no mess left behind! Cash in on our national adver-

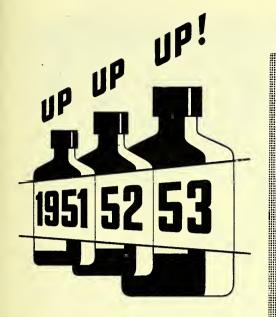
tising now, and keep up with your customers. Check your stock of antiseptic, water resistant, pinless, knotless, neat and tidy Prestoband.

Generous trade terms. Packed in attractive counter display outers. 3 widths: 2", 1" or \{ at 1/6, 9d. or 7d. a 4-yard roll.

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THE ANTISEPTIC SELF-ADHESIVE BANDAGE

* sticks to itself, but NOT to the skin!



SALES OF **'SULPHAMEZATHINE' 16%** HAVE DOUBLE IN THE LAST TWO YEARS

OBVIOUSLY poultry farmers consider 'Sulphamezathine' 16% to be the supreme remedy for coccidiosis. They show their confidence in the most practical way.

'SULPHAMEZATHINE' has always been the most popular coccidiosis remedy - for the simple reason that it is the best. Year by year its popularity increases - because practical poultry keepers have learned that it does all that it is claimed to do. It is their sure safe. guard against serious losses!

The peak time of the year for coccidiosis is just beginning. Might we suggest that it is worth your while to stock up now, to meet the growing demand for

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Trade Mark

Sodium Solution 16%

THE SUPREME REMEDY FOR COCCIDIOSIS



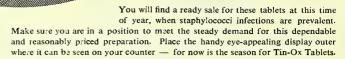
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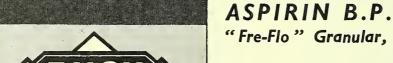
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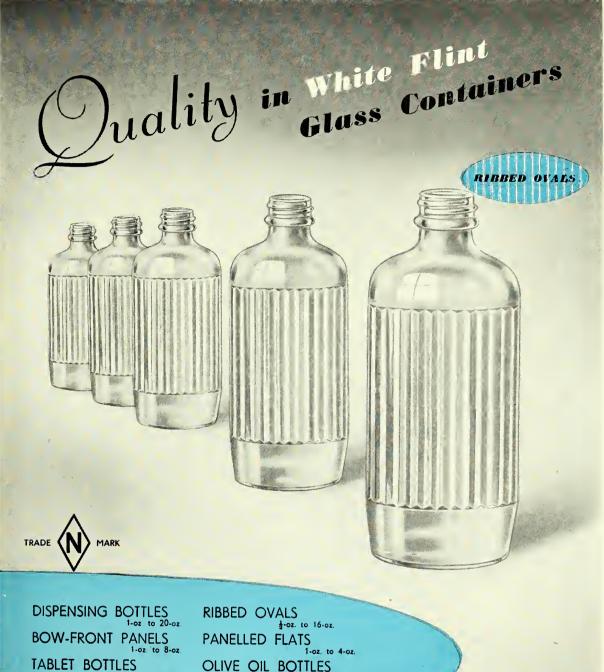
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Please write for samples and quotations

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FINE CHEMICAL MANUFACTURERS

LONDON, E.8. ENGLAND LTD.



Nos. 1 to 7½ sizes

ROUND SCREW JARS Tall and Semi-squat.

2½-oz., 5-oz. & 10-oz. **VIALS**

1-oz. to 3-oz.

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ATE, YORK. Tel. YORK 3021. 105 HATTON GARDEN, LONDON, E.C.1 FISHERGATE, YORK. TEL HOLBORN 7146

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Bow-Front Panels now also available in 16 oz. size



A new registered design in which a tapered glass reservoir is screwed into a wide black plastic base. An outstanding Medical Spray for water or light oil solutions, efficient and economical to the last drop.

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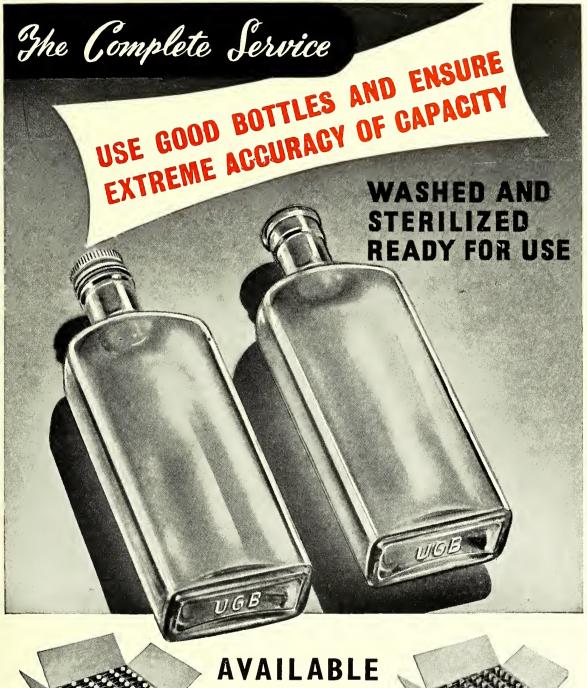
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UNITED GLASS BOTTLE MANUFACTURERS LTD

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Preceptin vaginal gel is available as follows:

Preceptin vaginal gel Package "A" (3 oz. tube and applicator)

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Supplies through your usual wholesaler please!

Retail price 9/6 Retail price 7/-

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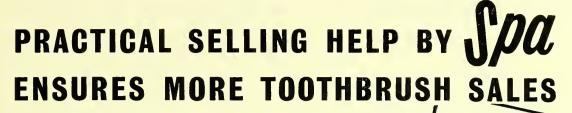
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WHEN YOU BUY

Win a FREE Holiday with

YOU'LL BE PROUD
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This Selling Season!

BIG SPACES IN THE NATIONAL NEWSPAPERS AND MAGAZINES

A HOLIDAY COMPETITION TO SEND CUSTOMERS INTO YOUR SHOP...LOOKING FOR SPA!



COMPLETE WITH COMPETITION SHOWCARD AND ENTRY FORMS

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ALL THIS SELLING HELP IS YOURS FOR AN ORDER OF ONLY 2 DOZ. SPA TOOTHBRUSHES

Send for full details of the new Spa Advertising and FREE dealer-aids to:

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The Sphinx STAINLESS STEEL **AUTOCLAVE**

at a reasonable price!

GAS OPERATED - THERMOSTATICALLY CONTROLLED

Made in 2 sizes:

II" x 10½" for sterilising ampoules and bottles of iniectible fluids.

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MAXIMUM WORKING **PRESSURE**

20 lbs. per sq. inch.

Accessories Available:

- Friedman-Athill type gas burner, and Compoflex tubing.
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- 4 Two stainless steel semicircular half plates for use when sterilising bottles.

Approved by the Technical Committee of Joint Insurance Companies

A fully descriptive leaflet and price list will be sent post free on request



SONS LTD ALBERT ST · BI



2 d. STOCKING (except Black) 4d. COLD WATER, CURTAIN and Black Stocking D. es

32/- gross

and Black Stocking Dies 34,7 E1033 Order Dyes and Shade Cards from our Agents Gt. Britain: W. B. Cartwright Ltd., Rawdon, Leeds N. Ireland: T. M. Mullan & Co., Ltd., 42 Victoria Street, Bel'as: Eire: May Roberts (Ireland) Ltd., Grand Canal Quay, Dublin, C.6.

"Sweetheart"

"Drinkrite"

DRINKING STRAWS

special SMALL PACKS of 25, 50 and 100 straws. Order now and INSIST on these brands for QUALITY.

HYGIENIC DRINKING STRAWS CO. LTD., LARKHALL, Lanarkshire

ALWAYS MEANS CLEAN HANDS

ASK YOUR WHOLESALER, OR WRITE: WIMSOL LTD., KEIGHLEY, FOR TERMS

A FREE WINDOW DISPLAY TO HELP YOU SELL MORE

AHROKA

Counter Display Cabinet supplied with one gross on request.

In 30 popular shades.

COLD WATER DYES

48/- gross: Retail 6d. pkt. (P.A.T.A.) Less 5% for cash in 7 days

These dyes carry a bigger profit margin than others and now, to help you sell more, we offer, free of charge, a Special Window Display dressed by specialists. This, with our extensive advertising in women's magazines, can mean record sales for you this Season. Write at once to:

Standard range of twelve colours. Dull or glossy series; supplied complete STRAW HAT DYES with brushes for applying the dye.

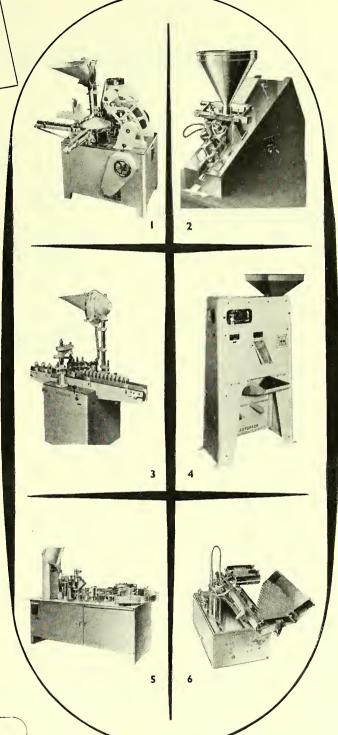
Large size 18/- per doz. Retail (P.A.T.A.) 2/- per bottle Small size 13/6 ,, ,, ,, ,, 1/6 ,, ,,

Less 5% for cash in 7 days

WHITAKER & CO. (KENDAL) LTD. DYE AND CHEMICAL MANUFACTURERS - KENDAL FOR THE WIDEST CHOICE
IN WEIGHING AND PACKAGING
MACHINERY

We'd find it difficult to show the entire range of Autopack weighing, filling and packaging machines. And the list of all the materials they handle would make an evening's reading. So we're being rather modest about it; from a range of over 100 machines we show six of particular interest to the pharmaceutical industries. Whether it's tablets or powders, pills or liquids, soft or hard materials—Autopack have a machine to do the job—accurately and fast. And if by chance you have a packaging problem we've never met—introduce us: we'll give it to our designers—they'll be happy to get to grips with it!

- Vial filling, rubber stoppering, capping and sealing machine. For powders or liquids.
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- **3** Automatic screw capping machine. For the widest possible range of metal and plastic screw caps.
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- **5** Tablet Autopacker. For feeding, counting in tablets and sealing envelopes or bags.
- **6** "Auto-Ampak" ampoule filling and sealing machine.



Autopack have 40 years' experience in the design and manufacture of packing machinery; three British factories: associate companies in Canada and America: and a world-wide sales and service organisation.



AUTOPACK LTD. (Incorporating the Automatic Weighing and Packing Machine Co.), Caroline Street, Birmingham, 3
Tel.: COLmore 4082

London Factory: Cuffley, Via Potters' Bar. Tel.: Cuffley 2600

MILLIONS OF WOMEN

SEE AND ACT ON THIS ADVERTISING

One woman in Five suffers from UNWANTED HAIR

Extensive advertising for Adelaide Grey's Beauty Preparations is now appearing regularly in more than 25 Women's Magazines—monthlies and weeklies, such as "Woman," "Woman's Own," "Woman's Weekly," etc., with a mass appeal.

This advertising support combined with new products, improved packings for existing lines and attractive sales material is building up increasing sales everywhere.

Get rid of disfiguring hair at home, safely and Grey's medically approved Wax Hair most sensitive skin. Sure, safe and simple.

Aleek

WAX-A-WAY

FOR HAIR ON THE FACE

Get rid of disfiguring hair at home, safely and Grey's medically approved Wax Hair most sensitive skin. Sure, safe and simple.

Aleek

FOR ARMS AND LEGS

No Pharmacist should fail to stock Adelaide Grey's long-famous, medically proved WAX DEPILATORIES. The safest and simplest method of removing unwanted hair. Unaffected by changes in fashion of feminine whim they provide steady repeat sales throughout the year.

Adelaide Grey's Laleek "LONGLASH" for lengthening and darkening the lashes and her attractive "EYE COSMETIC" in the dainty round container are other popular lines which find a ready sale.

WAX-A-WAY

For removing hair from the face

COOLWAX
For the arms and legs

Adelaide Grey

ALEEK

BEAUTY PREPARATIONS

30 OLD BOND STREET · LONDON · W.I

Adelaide Grey Beauty Prepa: ations are prepared under personal supervision at her South Molton Laboratories and distributed throughout the world by:—

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CHEMIST BUSINESS TRANSFER AGENTS AND VALUERS WHOLESALE AND RETAIL BRANCHES: BIRMINGHAM . SOUTHAMPTON . LIVERPOOL . SHEFFIELD . CARDIFF Irish Representative: Mr. J. A. Bassett, Ph.C., 57 Great Victoria Street, Belfast, Northern Ireland. Tel.: Belfast 27078

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17/6 for 36 words (min.) then 4d. per word. Box 2/-

SOUTH WALES. Prosperous and desirable situation. Highly remunerative chemist's business and off-licence. Monopoly position. Profits £3,000 p.a. Freehold, Write Box C 1083. WELL-KNOWN FIRM of chemists' sundriesmen in Midlands for sale as going concern owing to ill-health. Large connection. Inquiries in first instance to Box C 1161. WHOLESALE and retail drug store, chemist and hairdressers' sundr.es, double-fronted shop situated main road, Reading. Accommodation, 4 bed., 2 rec., bath, garage, garden, 2 store rooms. Lease at reasonable rent, New Morris van. Good stocks. Old-established connections. A nice business with good opening for pharmacist, Reasonable price. 185 Oxford Road, Reading. Tel.: 2597. C 1137

APPOINTMENTS

18/- per half-inch (min.) and pro rata. Box 2/-

COUNTY HOSPITAL, LINCOLN
Locum Pharmacist
required at the County Hospital, Lincoln.
Apply with full particulars to the Group Pharmacist, County Hospital, Lincoln.

C 6761

DARLINGTON DISTRICT HOSPITAL

HOSPITAL
MANAGEMENT COMMITTEE
DARLINGTON MEMORIAL
HOSPITAL
Post of Pharmacist or Scnior Pharmacist
Applicants must be registered members of the
Pharmaceutical Society of Great Britain. Salary
scale for Pharmacist £450 (age 23) x £25 to
£575—for Sen.or Pharmacist £525 x £25 to
£625. Post vacant May. Applications in writing
together with names of two referees to the
Secretary.

C 6796

FULHAM HOSPITAL ST. DUNSTANS ROAD, HAMMERSMITH, W.6

(HOSPITAL OF FULHAM AND KENSINGTON GROUP)
Locum Tenens Pharmacist required immediately, for period of two months. Salary 14 guineas weekly, Applications to Hospital Secretary (C.D.185) immediately. (Riv. 5407). C 6825

FULHAM AND KENSINGTON HOSPITAL MANAGEMENT COMMITTEE,

COMMITTEE,
ST. MARY ABBOTS HOSPITAL,
MARLOES ROAD,
KENSINGTON, W.8
Senior Pharmacist
required, National salary scales and conditions.
Applications stating age, qualificat ons and experience, quoting the names of two referees, to be submitted immediately to the Group Sccretary (C.D. 182). Fulham and Kensington Hospital Manasement Committee, 5 Collingham Gardens, S.W.5.

ILFORD AND BARKING GROUP HOSPITAL MANAGEMENT COMMITTEE The following locum staff are required at King George Hospital, Ilford (215 beds): (a) Pharmacist-in-charge for any two consecutive weeks in April or May.

secutive weeks in April or May,
Sept. 6-18.

Salary up to £15 15s, per week according to
experience.
(b) Assistant Dispenser (Apothecaries' Hall),
June 14-July 3.

Salary £10 10s, per week,
Applications, together with details of previous
appointments to the undersigned as soon as
possible. possible.

H. F. HARRIS, Deputy Group Secretary, King George Hospital, Ilford. C 6766

LUTON AND DUNSTABLE HOSPITAL Pharmacist

Pharmacist required for duty in the pharmaceutical department at the Luton and Dunstable Hospital, This is an interesting post in a modern department of a very busy general hospital, and would suit a newly qualified pharmacist, Whitley Council salary scale and service conditions. Apply to Assistant Secretary, Luton and Dunstable Hospital. C 6813

MAIDENHEAD GENERAL HOSPITAL, ST. LUKE'S ROAD, MAIDENHEAD

Dispenser
required to work three-quarters of full-time,
assisting Chief Pharmacist, National salary.
Applications giving qualifications and experience, with copies of testimonials to Hospital
Secretary (C. 6803) Secretary.

MARYFIELD HOSPITAL, **DUNDEE** (400 Beds)

Pharmacist
Applications are invited for the post of Pharmacist in this teaching hospital, Salary £450 (at age 23) x £25—£375.
Apply stating age, qualifications, experience and the pragment of two referees to the Model of

names of two referees to the Medical erintendent. C 6802 Superintendent.

MILLER GENERAL HOSPITAL

MILLER GENERAL HOSPITAL

(Cat. III)

Senior Pharmacist and Pharmacist

Applications are invited for the posts of Senior

Pharmacist and Pharmacist in a well-equipped

pharmaceutical department at the above hospital. Inspection of the department may be

made by arrangement with Chief Pharmacist.

Salary and conditions of service as laid down

by the Pharmaceutical Whitley Council.

Applications giving full details should be made

to the Secretary, G. & D./H.M.C., St. Alfege's

Hospital, S.E.10, as soon as possible. C 6824

PARKSIDE MENTAL HOSPITAL,

MACCLESFIELD, CHESHIRE
Qualified Assistant in Dispensing
required, to work under direction of Chief
Pharmacist, Salary and condit ons subject to
Health Service Whitley Counc.l Agreement,
Applications to Ch'ef Pharmacist, Parkside
Mental Hospital, Macclesfield, Cheshire. C 6832

MILLER GENERAL HOSPITAL,

MILLER GENERAL HUSTITAL, GREENWICH, S.E.10 (180 Beds)
Assistant in Dispensing required at above hospital. Salary according to age and experience (max. £415 p.a. at 29 years) plus London Weighting and qualification allowance if over 18 years, Superannuable post. Apply Chief Pharmacist, (Tel.: Tideway 1136).

C 6826

NORTH-WEST DURHAM
HOSPITAL MANAGEMENT
COMMITTEE
Senior Pharmacist
Applications are invited for the above-noted vacancy (Resident or Non-Resident), at the SHOTLEY BRIDGE GENERAL HOSPITAL (557 beds).

Appointment offers a thorough experience in all branches of hospital pharmacy. Applicant would be responsible for the manufacture of sterile preparations. Salary and conditions of service according to the Pharmaceutical Whitley Council decisions

Council decisions, Applications, stating age, qualifications and ex-perience, together with names of two referees should be sent to the Secretary, Shotley Bridge General Hospital, Shotley Bridge, Consett, co. Durham,

ROYAL FREE HOSPITAL GROUP
Locum Pharmacists
required for holiday rel.ef and other duties.
Salary £12 12s. per week. Applications, together
with names of two referees, should be addressed
to Group Chief Pharmacist, Royal Free Hospital, Gray's Inn Road, London, W.C.1.
C 6779

RUSH GREEN HOSPITAL, ROMFORD, ESSEX (301 Beds) Chief Pharmacist

Chief Pharmacist
Applications are invited from suitably qualified candidates for the appointment of CHIEF PHARMACIST (Category II), vacant from May 3, 1954, Whitley Council salary £625 x £25—£725 a year, plus London weighting, and conditions of service.

Applications stating (in order), age, qualifications, present appointment and experience and names of two referees should be forwarded to the Group Secretary, Romford Group H.M.C., Oldchurch Hospital, Romford, as soon as possible. (Hospital can be seen by arrangement with Medical Superintendent, Tel, Romford 7711).

ST. BARTHOLOMEW'S HOSPITAL, LONDON, E.C.1 Pharmacists

Two vacancies exist. Salary in accordance with the Whitley Council scale. Write, enclosing two copies of testimonials to the Pharmacist, C 6790

ST. LUKE'S HOSPITAL, BRADFORD Pharmacist (female)

required. General and Maternity Hospital. (Category V.) Up-to-date department. Opportunity for specialisation, Whit'ey Council salary and conditions. Apply Hospital Secretary. C 6789

Appointments—Continued

ST. GEORGE'S HOSPITAL, HYDE PARK CORNER, LONDON, S.W.1 Pharmacist

Applications are invited for the post of Pharmacist at above teaching Hospital, Salary in accordance with the Pharmaceutical Whitley Council scale. Applications, with full particulars, to: Chief Pharmacist. C 676

ST. MARK'S HOSPITAL, CITY ROAD, LONDON, E.C.1 Locum Assistant in Dispensing required for several weeks commencing imme-diately. Salary 9 gns. per week, Applications to Constant.

ST. STEPHEN'S HOSPITAL,

CHELSEA, S.W.10
Assistant-in-Dispensing
Technician required for manufacture of sterile solutions, etc. Previous experience desirable. Salary £7 7s. weekly, or on Whitley scale. Apply Chief Pharmacist. C 6795

THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET, LONDON, W.C.1 Pharmacist

Applications are invited for the post of pharmacist at this hospital, Salary within the Pharmaceutical Whitley Council Scale (£450 x £25—£575) plus London Weighting, £25 for recognised higher qualification. Apply by letter to Chief Pharmacist.

THE LONDON HOSPITAL,
WHITECHAPEL, LONDON, E.I.
Locum Registered Pharmacists
required from mid-April to mid-October 1954.
Dining-room facilities available. Write Secretary.

THE LONDON HOSPITAL,
WHITECHAPEL, LONDON, E.1
Pharmacist
Applicants must be registered Pharmacists.
Salary scale £450 (age 23) x £25 to £575 plus
London Weighting according to previous experience and service. Dining-room facilities available. Write Secretary.

UPTON HOSPITAL.

SLOUGH, BUCKS
Locum Senior Pharmacist
required from May 5. Salary £14 14s, per
week, Application to Hospital Secretary, C 6760

SITUATIONS OPEN

8/6 for 36 words (min.) then 3d, per word. Box 2/-

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

RETAIL (HOME)

BRISTOL. Chemist's counter assistant, Experienced young lady, single, pleasant personality, permanency. Dispensing experience an advantage but not escential. Usual particulars, age and salary required to Dunn (Chemists), Ltd., Bristol, 4. Bristol, 4. C 1130
CHEMISTS COUNTER ASSISTANT, experi-CHEMISIS COUNTER ASSISTANT, experienced lady required, pleasant personality. Excellent conditions. Apply Kendale Dispensing Chemists, 51 Exmouth Street, E.C.1. Phone: Terminus 9494. C 6811 (VIVIL SERVICE STORES require qualified chemist as buyer of drug department. Previous retail store experience preferred but not escential. Write in first instance giving details of previous experience and salary required to the Directors, 425 Strand, W.C.2. C 1148 (CROYDON). Pharmacist (either sex) required as assistant to director. Duties mainly dispensing with occasional help on counter. Pleasant working conditions. Particulars and salary required to Ashbrooks Chemists, Ltd., 172B Church Road, Mitcham, Surrey. C 1123 DEVON. Experienced assistant (including veterinary) for small market town. Modern flat over shop. Please give particulars of experience, salary required, etc., to Manley, Chemist, Honi-

EXPERIENCED LADY ASSISTANT required for counter and dispensing duties. Apply by letter to W. J. Boyes, Ltd., 61 Balham Hill, C 1090

ILFORD. Excellent opportunity for energetic ILFORD. Excellent opportunity for energetic pharmacist to manage busy branch in pleasant area. Well fitted shop, Adequate assistance. Modern dispensary, Progressive salary with monthly bonus and rota duty payments. Accommodation available if required, Permanency with pension fund, etc. Apply with full details stating when available for interview to Chief Pharmacist, Grange Road, Leyton, E.10, C.1156

LADY ASSISTANT, unqualified, experienced counter, cosmetics, some knowledge dispensing, required soon as possible, holiday this year, no Wednesday evening duty, Apply F. D. Finn (Chemists), Ltd., 529 Battersea Park Road, S.W.II, Bat, 1391. C1106 LONDON, Interesting position offered in leading West End chemists to unqualified male. Knowledge of dispensing and surgical (F.P.A.) an advantage. Commission and optional pension scheme, Apply giving full details to Box C 1160.

C 1160. LONDON, CENTRAL. Young lady assistants tequired for toilet department in good-class pharmacy, Part-time and full-time, Permanent positions with good progressive salaries, Saturday half-day, Summer holiday with pay this year, Apply with details of age and experience to Box C 6773.

to Box C 6773.

MANAGER required for attractive pharmacy in Tolworth, Surrey. The position is permanent, offering good salary and commission with superannuation benefits. Apply, giving full particulars, to the Staff Manager, Royal Arsenal Co-operative Chemists, Limited, 71 Powis Street, Woolwich, S.E.18. C 6749 MANAGER REQUIRED for busy pharmacy in Headingley, Leeds. Near cricket ground. Good salary with commission, including excellent house adioining, with ample room for family. Two weeks holiday. Write, giving full details of age and experience, with reference to W. A. Wharram (Retail), Ltd., 27 Eastgate, Leeds, 2. C 6794 MIDDLESEX. Pharmacist required to manage

Leeds, 2. C 6794
MIDDLESEX. Pharmacist required to manage spacious well-fitted branch with substantial counter trade. Good opportunity for ambitious man to earn top salary together with monthly bonus and rota duty payments. Accommodation available if required or assistance given in house purchase. Superannuation benefits, etc. Apply with full details stating when available for interview to Chief Pharmacist. Grance Rd. teyton, E.10.

PHARMACIST, lady or gentleman, to manage

PHARMACIST, lady or gentleman, to manage old-established branch in pleasant residential area. Most congenial position with good salary and three weeks' annual holiday. Comfortable and roomy living accommodation available if required. Apply in first instance to A. Platts, M.P.S., Eardley and Furnival, 265 Glossop Road, Sheffield.

QUALIFIED DISPENSER required, London, S.E.6. House with small garden available. Full particulars please to Box C 1155.

SUPERINTENDENT PHARMACIST for good-class modern pharmacy, centre city. Pleasant

SUPERINTENDENT PHARMACIST for good-class modern pharmacy, centre city, Pleasant atmosphere and conditions, Light dispensing and photography. Perry & Sturman, Ltd., 76 Hertford Street, Coventry, C 1136 UNQUALIFIED ASSISTANT, whole or part-time, for dispensing and counter, in S.W. London. Apply Box C 1089. WANTED: PHARMACIST (male or female) as superintendent, Wages 14 gns, weekly. House rent free. Good hours and conditions. Apply the Garndiffaith & Varteg Co-operative Society, Ltd., Garndiffaith, Mon. C 1110 WEST MIDDLESEX. Unqualified assistant for dispensing and counter. Photographic experience an advantage, Davies, Crescent Parade, Hillingdon, Middlesex. C 1113

LOCUMS WANTED

LOCUM PHARMACIST required, April 17 to April 27 inclusive, due to illness, Country, Eacott, 105 London Road, Teynham, nr. Sit-tingbourne, Kent. C 1135 LOCUM PHARMACISTS required for Lon-HARMACISTS required for London and Suburhan areas, long or short periods May to October. Permanency at conclusion of tour if desired. Salary and expenses basis. Apply to H. Warburton, M.P.S., Chief Pharmacist, London Co-operative Chemists, Ltd., Grange Road, Leyton, E.10.

WHOLESALE

A LONDON manufacturing house requires two representatives to develop existing business through infant welfare centres and clinics. Extensive experience in this field is essential, Salary will be in accordance with experience. Please apply giving full details and quoting keference C/1 to Box C 6821.

ASSEMBLERS, experienced in patents, proprietar.es, toilet requisites and sundries, required. Excellent scope. Apply Biorex Laboratories. Ltd., 47/51 Exmouth Street (Mkt.), London, E.C.1. Phone: Terminus 9494, C 6810

ASSISTANT for chemical sales manager.

ASSISTANT for chemical sales manager. Knowledge import/export necessary, typing an advantage. Progressive position. Box C 6831.

advantage. Progressive position, Box C 6831.

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MEDICAL REPRESENTATIVES required by London house to visit doctors, hospitals and chemists in the Yorkshire, Northumberland and Durham areas, in Scotland (principal towns from Glasgow to Aberdeen) and also in the Greater London area. Applicants must have a good pharmaceutical background and a knowledge of medical terminology, Men between the ages of 25 and 35 are invited to apply, and details of age, experience and salary required should be stated. Box C 181.

MEDICAL REPRESENTATIVES. Sandoz Products, Ltd., invite applications from young men for the immediate appointment of a medical representative in the London North-east area and the Bristol area (principally Gloucester-shire and Somerset). Age not exceeding 28, Applicants should be pharmacists (preferably F.P.S.). Salary commensurate with experience. Thorough training provided. Please send full details of age, education, qualifications and experience, with photograph, to the Manager, Sandoz Products, Ltd., 134 Wigmore St., London, W.1. C 6748

Pharmaceutical Specialities (May & Baker), Ltd., Dagenham, Essex

Pharmacists with a genuine interest in a career as a medical representative are invited to apply for vacancies in (a) the West London area and (b) Lincolnshire and part of Yorkshire. Experience in hospital pharmacy would be an advantage. These are permanent and progressive appointments and the initial salary will be commensurate with qualifications and experience. Bonus and expense allowance are payable in addition, There is a contributory pension scheme. Candidates should be preferably aged 25-35 years. Apply initially in writing stating particulars of qualifications and experience to the Personnel Officer. C 6804

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PHARMACIST preferably with manufacturing

C 1149
QUALIFIED CHEMIST required by manufacturers of toilet preparations. Middlesex-Surrey border. Apply stating experience, age and salary required to Box C 1142.

REPRESENTATIVE with first-class connection among chemists Midland areas, required for wholesale sundries' house. Excellent opportunity for right man. State in confidence full particulars of experience, etc., and whether car owner. Box C 1150,

DEPRESENTATIVES with good connections

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REPRESENTATIVES with good connections with chemists, stores, wholesalers, etc., required by manufacturers of toilet preparations for all areas of England (including London, with the exception of a few house accounts), Wales and Northern Ireland. Commission basis. Moderate advertising until sales organisation established and thereafter good nat onal advertising. Excellent opportunities for the right men with an eye on the future. Write in the first instance to Scherk, Ltd., 103 Cannon Street, London, E.C.4, giving details of area covered, period between visits, and type of other lines carried.

established connections with stores and the mists to sell fast-selling, unique and attractive gilded perfume novelties, Good salary and commission. When replying state territory covered. REPRESENTATIVES REQUIRED

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Canteen facilities available. Apply Box C 6/98. SALES OFFICE. A vacancy will soon occur in the London sales office of a well-known pharmaceutical manufacturing company. Applications are invited in confidence from young men, age limit 25. Retail experience essential, qualification preferred. Excellent prospects. Full particulars in own handwriting to Sales Director. Box C 6819.

SALES REPRESENTATIVE required for lished connection in Surrey, Hants, Berkshire and Oxon, Applicants should be car owners, with thorough knowledge of retail trade and connection amongst pharmacists on territory. Full particulars and experience to Box C 6820.

SHARP & DOHME, LTD.

SHARP & DOHME, LID.

Additional Medical Representatives will shortly be required in various areas throughout the country including:—(a) Yorkshire (based on Leeds); (b) Midland Countles; (c) East Lancashire; (d) London area, Applications are invited from men under 35 years of age, with a good pharmaceutical and/or medical background, for these interesting and progressive positions, Previous representative experience not essential as training with full salary will be given, Pension scheme in force, Apply: Sales Manager, Sharp & Dohme, Ltd., Hoddesdon, Herts.

C 6830

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scheme, 5-day week, Full details in whoils as Box C 6784.

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N.W.10. C 6727 WARD, BLENKINSOP & CO., LTD., require a senior medical representative for visiting consultants in London, W.1, and the teaching hospitals. Applicants with previous experience of this type of work are invited to send full details of their careers to The Manager, Medical Products Department, 6 Henrietta Place, London, W.1. C 6815

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and retail chemists and drapery stores, etc. Box C 1143.

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